TC-KA1ESA/KE500S

SERVICE MANUAL

US Model
TC-KA1ESA/KE500S

Canadian Model
TC-KA1ESA

AEP Model
UK Model
Australian Model
E Model
TC-KE500S

Photo : TC-KE500S

* Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.

"DOLBY", the double-D symbol DD and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

Model Name Using Similar Mechanism	NEW
Tape Transport Mechanism Type	TCM-190VB14

SPECIFICATIONS

System

Recording system
4-track 2-channel stereo

Fast winding time (approx.)
90 sec. (with Sony C-60 cassette)

High-speed fast-winding time (approx.)
45 sec. (with Sony C-60 cassette)

Bias
AC bias

Heads
Erasing head × 1 (S&F head)
Recording head × 1 (SD head)
Playing head × 1 (SD head)

Motors
Capstan motor × 1 (DC servo motor)
Reel motor × 1 (DC motor)

Signal-to-noise ratio (at peak level, weighted, and with Dolby NR off)
Type I tape, Sony Type I (NORMAL): 57 dB
Type II tape, Sony Type II (HIGH): 59 dB
Type IV tape, Sony Type IV (METAL): 61 dB

S/N ratio improvement (approximate values)
With Dolby B NR on: 5 dB at 1 kHz, 10 dB at 5 kHz
With Dolby C NR on: 15 dB at 500 Hz, 20 dB at 1 kHz
With Dolby S NR on: 10 dB at 100 Hz, 24 dB at 1 kHz

Harmonic distortion
0.4% (with Type I tape, Sony Type I (NORMAL): 160n Wb/m 315 Hz, 3rd H.D.)
1.5% (with Type IV tape, Sony Type IV (METAL): 250n Wb/m 315 Hz, 3rd H.D.)

Frequency response (Dolby NR off)
Type I tape, Sony Type I (NORMAL):
20 - 17,000 Hz (±3 dB, IEC)
15 - 18,000 Hz (±6 dB)
Type II tape, Sony Type II (HIGH):
20 - 18,000 Hz (±3 dB, IEC)
15 - 19,000 Hz (±6 dB)
Type IV tape, Sony Type IV (METAL):
20 - 19,000 Hz (±3 dB, IEC)
20 - 16,000 Hz (±3 dB, –4dB recording)
15 - 21,000 Hz (±6 dB)

– Continued on page 2 –

STEREO CASSETTE DECK

SONY®

Wow and flutter
±0.085% W. Peak (IEC)
0.055% W. RMS (NAB)
±0.16% W. Peak (DIN)

Inputs

Line inputs (phono jacks)
Sensitivity: 0.16 V
Input impedance: 47 kilohms

Outputs

Line outputs (phono jacks)
Rated output level: 0.5 V at a load impedance of 47 kilohms
Load impedance: Over 10 kilohms

Headphones (stereo phone jack)
Output level: 0.25 mW at a load impedance of 32 ohms

General

Power requirements

Where purchased	Power requirements
US, Canadian model :	120 V AC, 60 Hz
AEP, UK, German, Malaysia, Singapore model :	220 - 230 V AC, 50/60 Hz
Australian model :	240 V AC, 50 Hz
E model :	120, 220, or 240 V AC, 50/60 Hz adjustable with the voltage selector

Power consumption
21 W

Dimensions (approx.) (w/h/d)
430 x 120 x 310 mm (17 x 4 3/4 x 12 1/4 inches)
incl. projecting parts and controls

Mass (approx.)
4.2 kg (9 lbs 5 oz)

Supplied accessories

Audio connecting cords (2)

Design and specifications are subject to change without notice.

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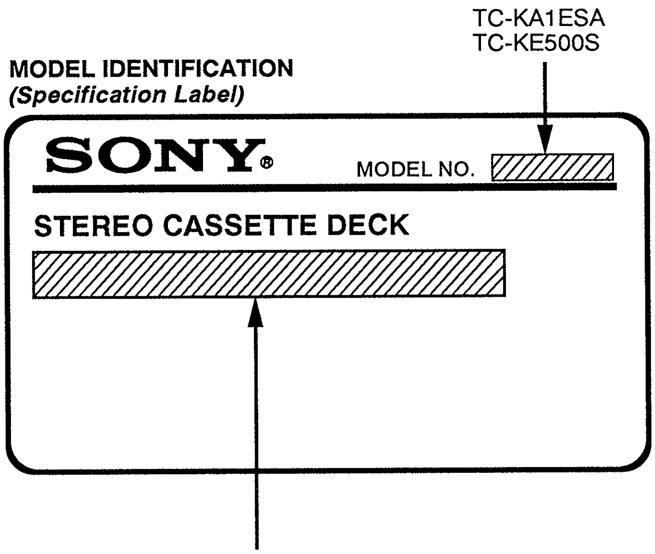
MODEL IDENTIFICATION
(Specification Label)



US, Canadian model : AC 120V~60Hz
AEP, UK, German, Malaysia,
Singapore model : AC 220-230V~50/60Hz
Australian model : AC 240V~50/60Hz
E model : AC 120, 220 or 240V
adjustable~50/60Hz

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SAFETY CHECK-OUT (US Model)

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

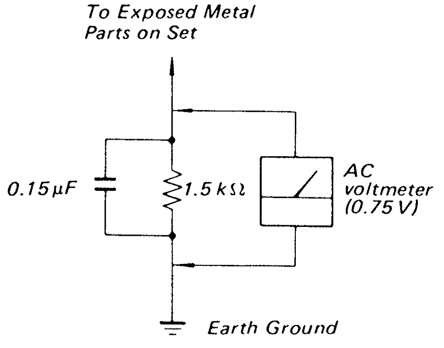
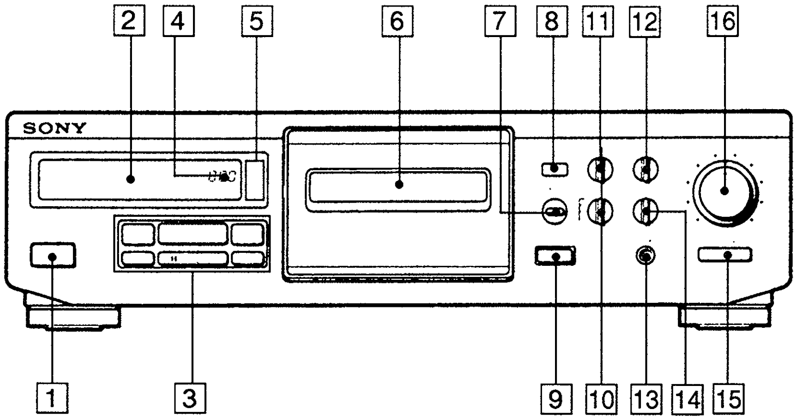


Fig. A. Using an AC voltmeter to check AC leakage.

SECTION 1
GENERAL

IDENTIFYING THE PARTS ON THE FRONT PANEL



1 POWER switch
2 Display panel
3 Tape operation buttons
  ◀◀ (rewind) (Multi – AMS**) button
  ▷ (play) button
  ▶▶ (fast – forward) (Multi – AMS**) button
  ■ (stop) button
  II PAUSE button
  ○ REC MUTE (record muting) button
  ● REC (record) button
4 Tape counter
5 Counter buttons
  RESET button
  MEMORY button
6 Cassette holder
7 CALIBRATION button
8 Remote control sensor
9 ⏏ (eject) button
10 DOLBY NR (noise reduction) button
11 BIAS control
12 REC (recording) LEVEL control for calibration
13 PHONES jack (stereo phone jack)
14 BALANCE control
15 MONITOR button
16 REC (recording) LEVEL control

**AMS is an abbreviation for Automatic Music Sensor

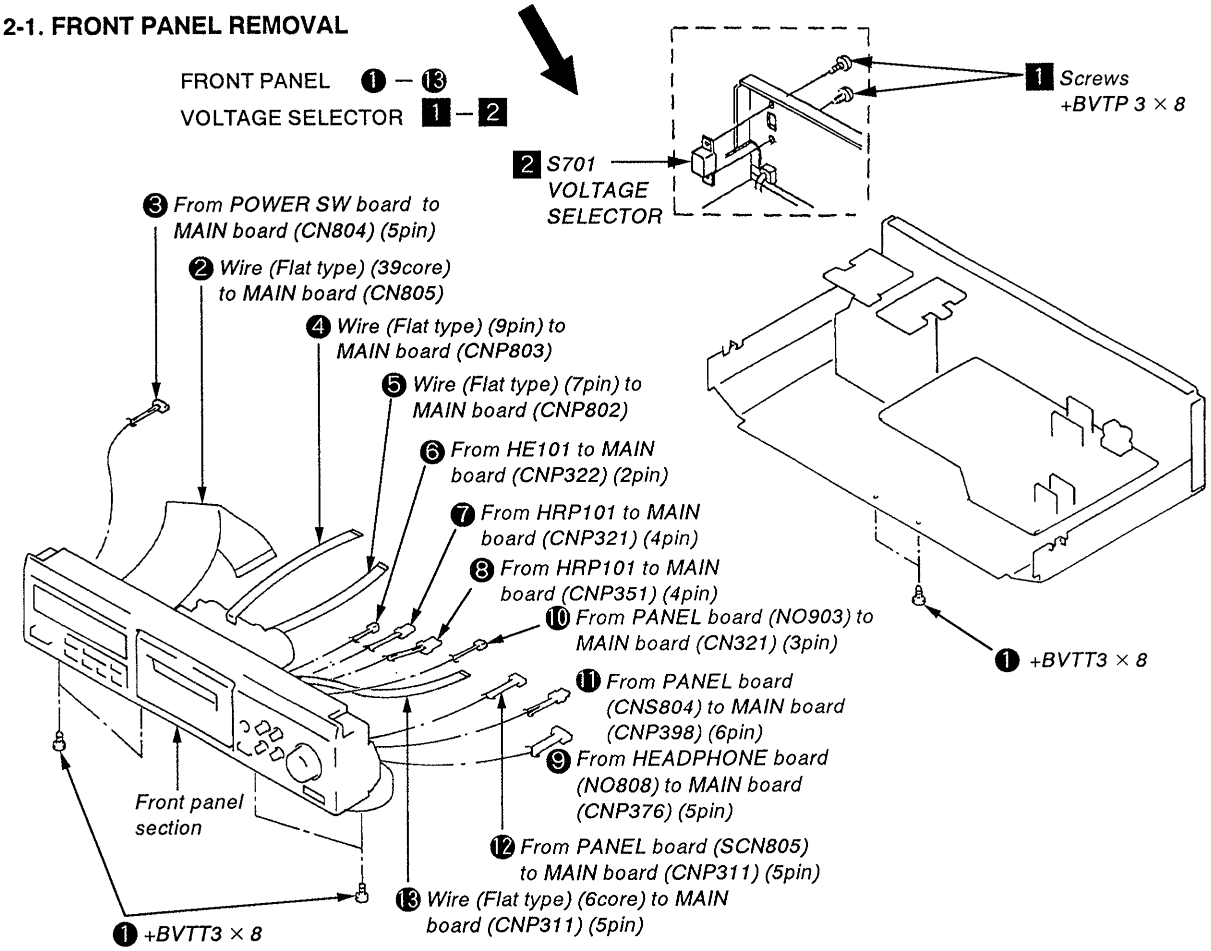
SECTION 2
DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

CASE
Unscrew the four case attachment screws M3 × 8 and remove the case.

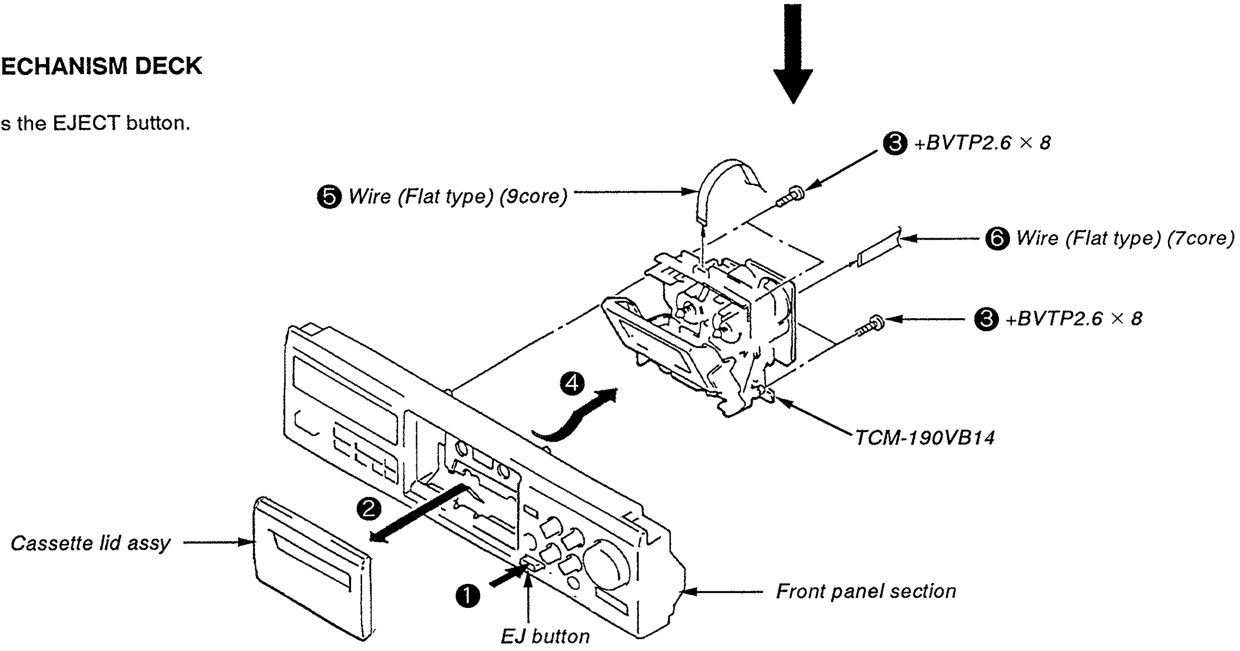
2-1. FRONT PANEL REMOVAL

FRONT PANEL ❶ – ⓭
VOLTAGE SELECTOR 1 – 2

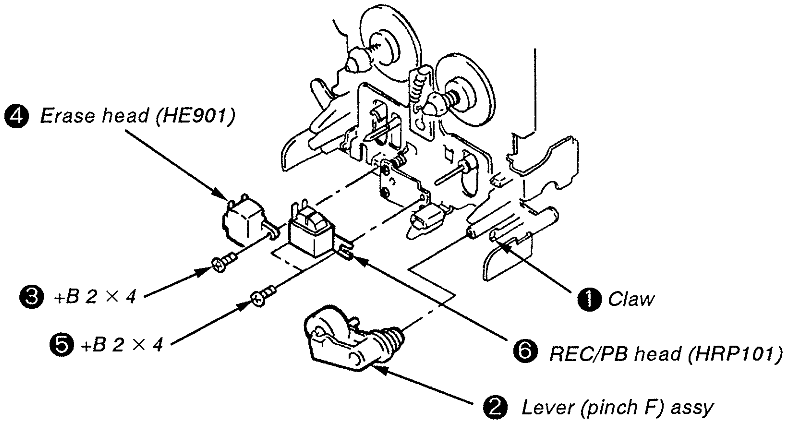

1 Screws
+BVTP 3 × 8
2 S701
VOLTAGE
SELECTOR
❸ From POWER SW board to MAIN board (CN804) (5pin)
❷ Wire (Flat type) (39core) to MAIN board (CN805)
❹ Wire (Flat type) (9pin) to MAIN board (CNP803)
❺ Wire (Flat type) (7pin) to MAIN board (CNP802)
❻ From HE101 to MAIN board (CNP322) (2pin)
❼ From HRP101 to MAIN board (CNP321) (4pin)
❽ From HRP101 to MAIN board (CNP351) (4pin)
❿ From PANEL board (NO903) to MAIN board (CN321) (3pin)
❶ +BVTT3 × 8
⓫ From PANEL board (CNS804) to MAIN board (CNP398) (6pin)
❾ From HEADPHONE board (NO808) to MAIN board (CNP376) (5pin)
Front panel section
⓬ From PANEL board (SCN805) to MAIN board (CNP311) (5pin)
⓭ Wire (Flat type) (6core) to MAIN board (CNP311) (5pin)
❶ +BVTT3 × 8

2-2. MECHANISM DECK

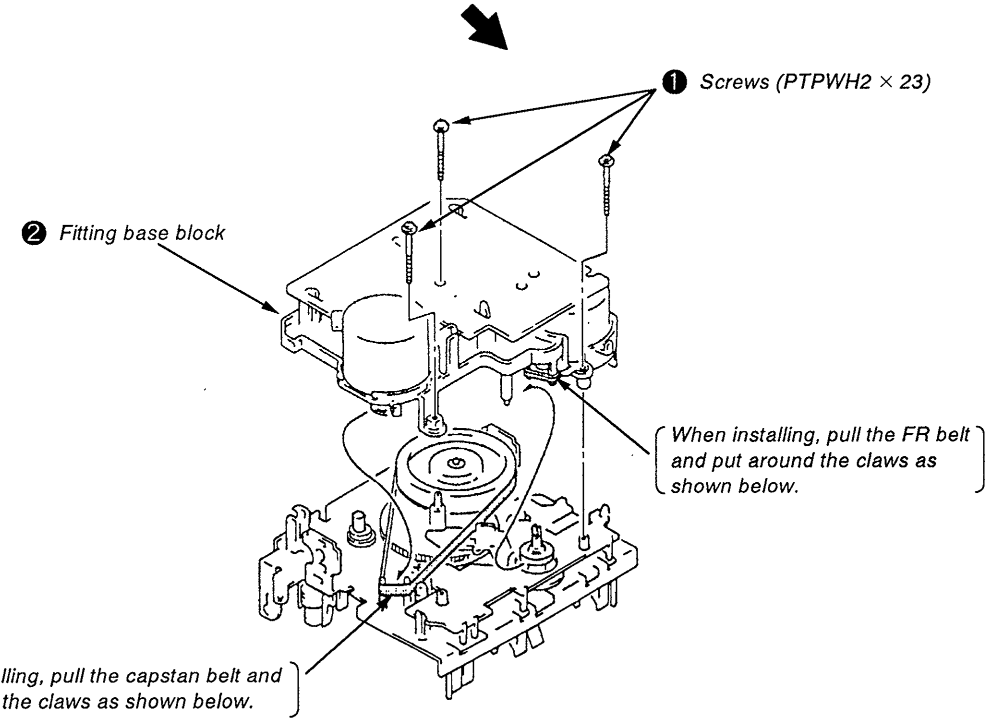
❶ Press the EJECT button.


❸ +BVTP2.6 × 8
❺ Wire (Flat type) (9core)
❻ Wire (Flat type) (7core)
❸ +BVTP2.6 × 8
❹
TCM-190VB14
❷
Cassette lid assy
❶
Front panel section
EJ button

2-3. HEAD


❹ Erase head (HE901)
❸ +B 2 × 4
❺ +B 2 × 4
❶ Claw
❻ REC/PB head (HRP101)
❷ Lever (pinch F) assy

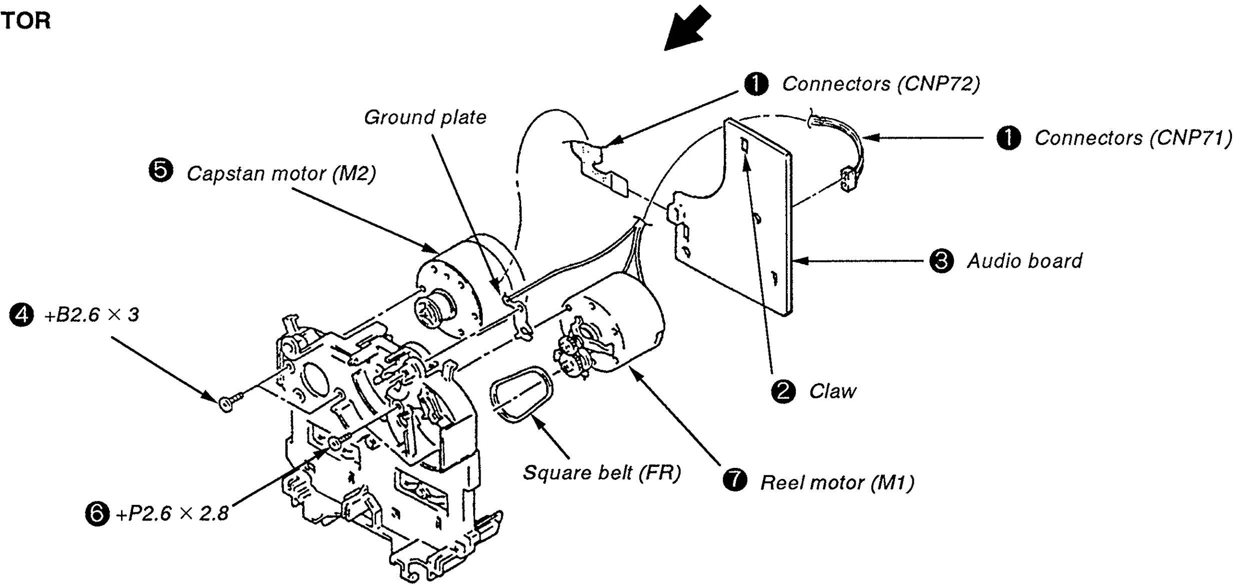
2-4. FITTING BASE BLOCK


❶ Screws (PTPWH2 × 23)
❷ Fitting base block

When installing, pull the FR belt and put around the claws as shown below.

When installing, pull the capstan belt and put around the claws as shown below.

2-5. MOTOR


❶ Connectors (CNP72)
Ground plate
❶ Connectors (CNP71)
❺ Capstan motor (M2)
❸ Audio board
❹ +B2.6 × 3
❷ Claw
Square belt (FR)
❼ Reel motor (M1)
❻ +P2.6 × 2.8

SECTION 3
ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured alcohol-moistened swab:

record/playback/erase head	pinch roller
rubber belts	capstan
idlers	

2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustment.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

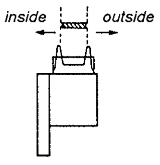
Torque Measurement

Mode	Torque meter	Meter reading
Forward	CQ-102C	30 to 65g•cm (0.42 to 0.90oz•inch)
Forward back tension	CQ-102C	1 to 6g•cm (0.014 to 0.08 oz•inch)
FF/REW	CQ-201B	70 to 120g•cm (0.98 to 1.66 oz•inch)

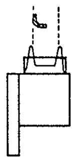
Record/Playback Head Height/Declination Adjustment

Procedures :

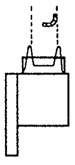
1. Test cassette : CQ-009C
2. Insert the mirror cassette and put the unit in record/Playback mode.
   1) Height Adjustment :
   Check to see if the tape is curling at the tape guide of the head. If it is curling, tighten screws Ⓐ , Ⓑ and Ⓒ , respectively by the same angle, moving the head so that it remains at the same angle throughout the procedure. If it curls on the bottom side of the mirror cassette (actually the inner side), tighten all the screws equally ; but loosen them if the tape begins to curl on the top side (outer side).



Normal (Record/playback head as seen from the side of the erasehead.)



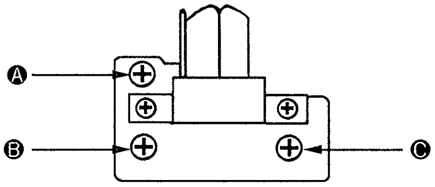
Curling on the inner side Tighten screws Ⓐ, Ⓑ and Ⓒ.



Curling on the outer side Loosen screws Ⓐ, Ⓑ and Ⓒ.

   2) Declination Adjustment :
   While in the record/playback position, set the back tension to 0 (wind the supply reel with something thin like a pencil in a counterclockwise direction) and make sure there is no curling or shifting (shifting up/shifting down) at the guide of the record/playback head.
   Because shifting can only occur due to a difference in the width of the tape and that of the tape guides (curling will otherwise occur), it is necessary to pay close attention since it can be easily overlooked.
   When there is a shift, tighten screws Ⓑ and Ⓒ equally and change the declination of the head. If the tape is shifting up, tighten the screws, and if it is shifting down, loosen them.
   Repeat the adjustments in steps 1) to 2) and fine adjust the height and the declination.

Adjustment Location : – record/playback head –

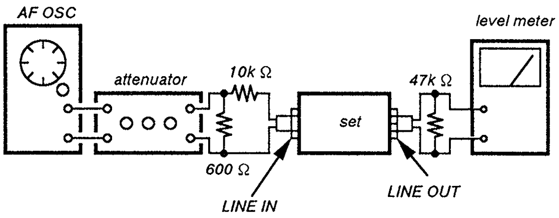


3-2. ELECTRICAL ADJUSTMENTS

PRECAUTION

1. The adjustment should be performed in the publication.
   (Be sure to male playback adjustment at first.)
2. The adjustments and measurement should be performed for both L-CH and R-CH.
   - Switch position
     DOLBY NR switch : OFF
   - Standard record position:
     Deliver the standard input signal level to input jack and set the REC LEVEL control to obtain the standard output signal level as follows.

– Record Mode –



Standard Input Level

Input terminal	LINE IN
source impedance	10k Ω
input signal level	0.5V (− 3.8dB)

Standard Output Level

Output terminal	LINE OUT
load impedance	47k Ω
output signal level	0.5V (− 3.8dB)

Test Tape

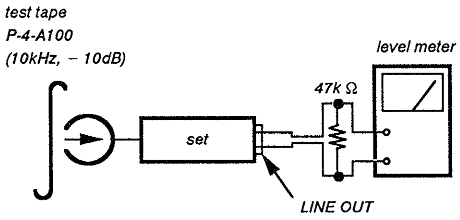
Tape	Contents	Use
P-4-A100	10kHz, − 10dB	Azimuth Adjustment
P-4-L300	315Hz, 0dB	PB Level Adjustment
WS-48B	3kHz, 0dB	Tape Speed Adjustment

0dB=0.775V

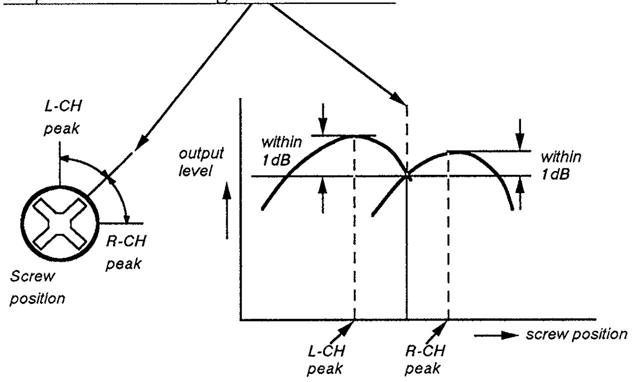
Record/Playback Head Azimuth Adjustment

Procedure :

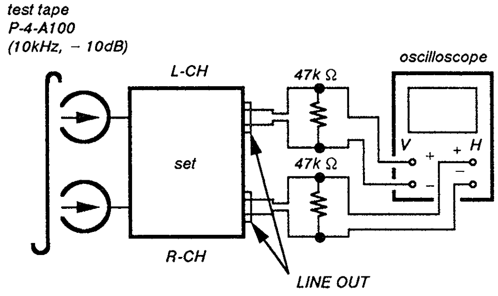
1. Forward playback Mode

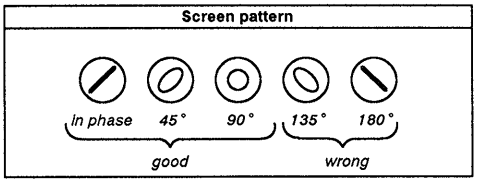

test tape
P-4-A100
(10kHz, − 10dB)
level meter
47k Ω
set
LINE OUT

2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1dB.


L-CH
peak
R-CH
peak
Screw
position
output
level
within
1dB
within
1dB
L-CH
peak
R-CH
peak
screw position

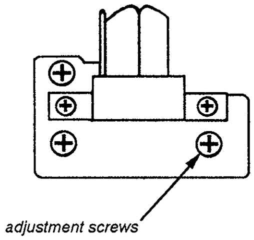
3. Phase check
   Playback Mode


test tape
P-4-A100
(10kHz, − 10dB)
L-CH
47k Ω
oscilloscope
set
47k Ω
V
H
R-CH
LINE OUT


Screen pattern
in phase
45°
90°
135°
180°
good
wrong

4. After the adjustment, lock the adjustment screws with suitable locking compound.

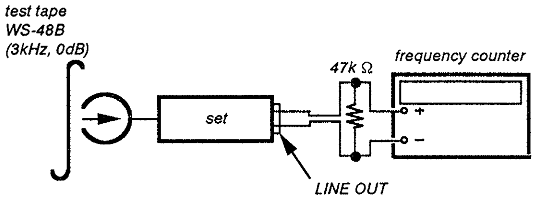
Adjustment Location : − record/playback head −


adjustment screws

Tape Speed Adjustment

Procedure :

− Forward Playback Mode −


test tape
WS-48B
(3kHz, 0dB)
47k Ω
frequency counter
set
LINE OUT

1. Set to FWD playback mode.
2. Adjust RV71 so that the frequency counter reading becomes 3,000 ± 15Hz.

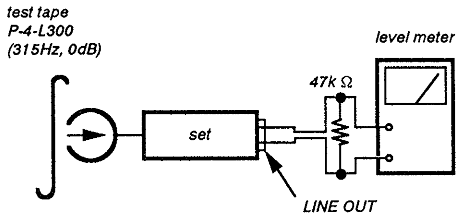
Frequency difference between the beginning and the end of the tape should be within 3%.

Adjustment Location : AUDIO board (Page 10)

Playback Level Adjustment

Procedure :

– Forward Playback Mode –


test tape
P-4-L300
(315Hz, 0dB)
set
47k Ω
level meter
LINE OUT

Adjust RV151 (L-CH) and RV251 (R-CH) so the level meter reading becomes the adjustment limits below.

Adjustment Value :

LINE OUT level : – 7.7 ± 0.5dB (0.301 to 0.338V)

Level difference between channels : within 0.5dB

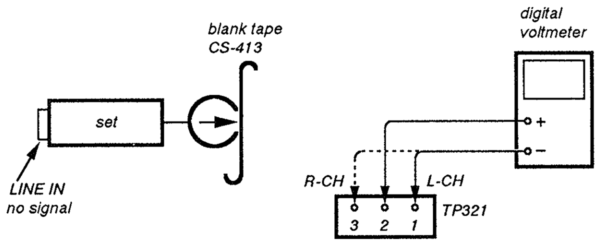
Confirm the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times

Adjustment Location : MAIN board (Page 10)

Bias Consumption Current Adjustment

This adjustment should be performed when replacing the head assy or the bias oscillating transformer (T121, T221).

Procedure :


blank tape
CS-413
set
LINE IN
no signal
digital
voltmeter
+
–
R-CH
L-CH
3
2
1
TP321

1. Connect the digital voltmeter to test point TP321.
2. Set RV121 (L-CH) and RV221 (R-CH) to mechanical center.
3. Set to FWD record mode.
4. Adjust T121 (L-CH) and T221 (R-CH) so that the digital voltmeter reading becomes minimum.

Adjustment Location : MAIN board (Page 10)

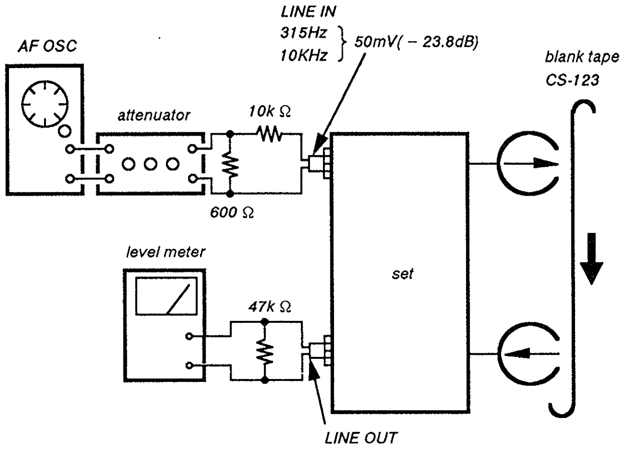
Record Bias Adjustment

Setting :

REC LEVEL control : Standard Record

Procedure :

1. Mode : Simultaneous record and playback


LINE IN
315Hz
10KHz
50mV(– 23.8dB)
AF OSC
attenuator
10k Ω
600 Ω
blank tape
CS-123
level meter
47k Ω
set
LINE OUT

2. Adjust RV121 (L-CH) and RV221 (R-CH) so that the 10 kHz playback output is 0 ± 0.3 dB relative to the 315Hz output.

Adjustment Location : MAIN board (Page 10)

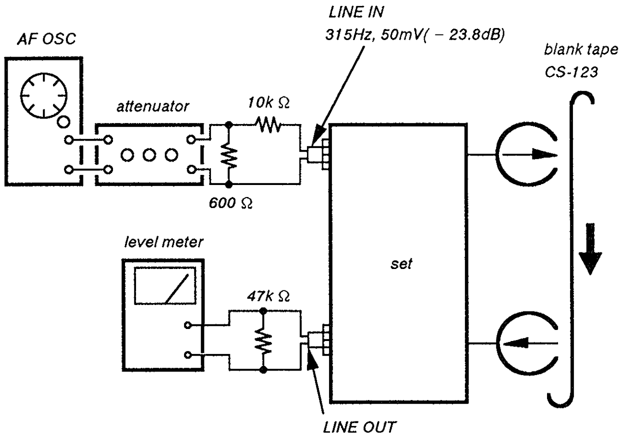
Record Level Adjustment

Setting :

REC LEVEL control : Standard Record

Procedure :

1. Mode : Simultaneous record and playback


LINE IN
315Hz, 50mV(– 23.8dB)
AF OSC
attenuator
10k Ω
600 Ω
blank tape
CS-123
level meter
47k Ω
set
LINE OUT

2. Adjust RV112 (L-CH) and RV212 (R-CH) so that the level meter reading becomes the adjustment limits below.

Adjustment Value : – 23.8 ± 0.5dB (47.2 to 53mV)

Adjustment Location : MAIN board (Page 10)

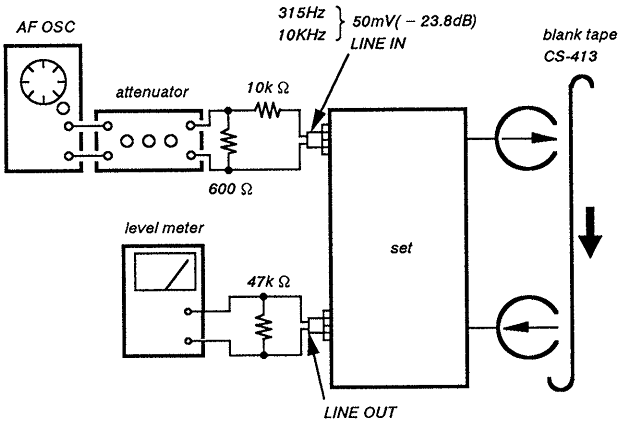
Record EQ (IV) Adjustment

Setting :

REC LEVEL control : Standard Record

Procedure :

1. Mode : Simultaneous record and playback



AF OSC
attenuator
315Hz
10KHz
50mV(– 23.8dB)
LINE IN
10k Ω
600 Ω
blank tape
CS-413
level meter
set
47k Ω
LINE OUT

2. Adjust RV111 (L-CH) and RV211 (R-CH) so that they become maximum.
3. Adjust RV111 (L-CH) and RV211 (R-CH) so that the difference between R-CH and L-CH at 10 kHz is within 1dB.
4. Adjust RV312 so that the R-CH becomes the adjustment value.

Adjustment Level :

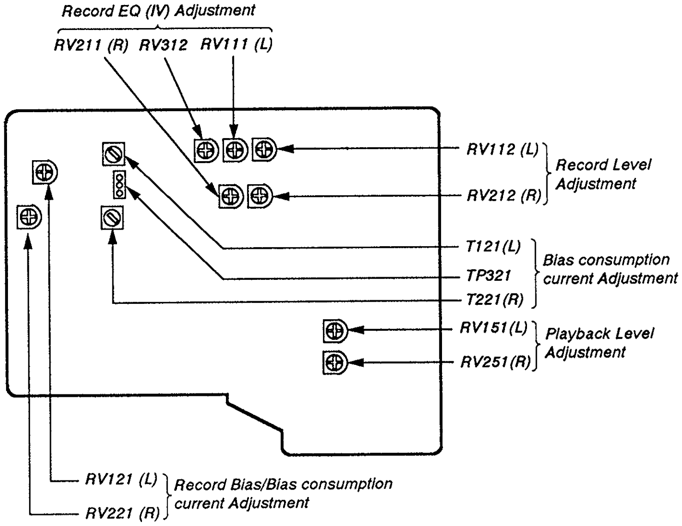
The playback output of 10kHz level difference against 315Hz reference should be ± 1.0dB.

Adjustment Location : MAIN board

– Adjustment Parts Location Diagrams –

[MAIN BOARD]

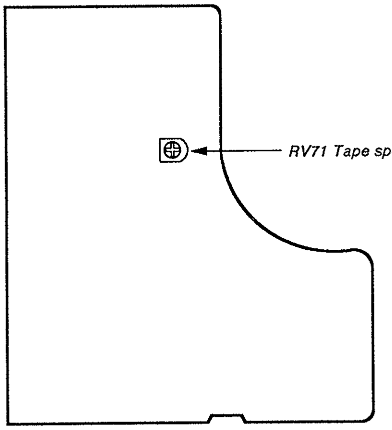
(Component Side)



Record EQ (IV) Adjustment
RV211 (R)
RV312
RV111 (L)
RV112 (L)
RV212 (R)
Record Level Adjustment
T121(L)
TP321
T221(R)
Bias consumption current Adjustment
RV151(L)
RV251(R)
Playback Level Adjustment
RV121 (L)
RV221 (R)
Record Bias/Bias consumption current Adjustment

[AUDIO BOARD]

(Component Side)



RV71 Tape speed

SECTION 4
EXPLANATION OF IC TERMINALS

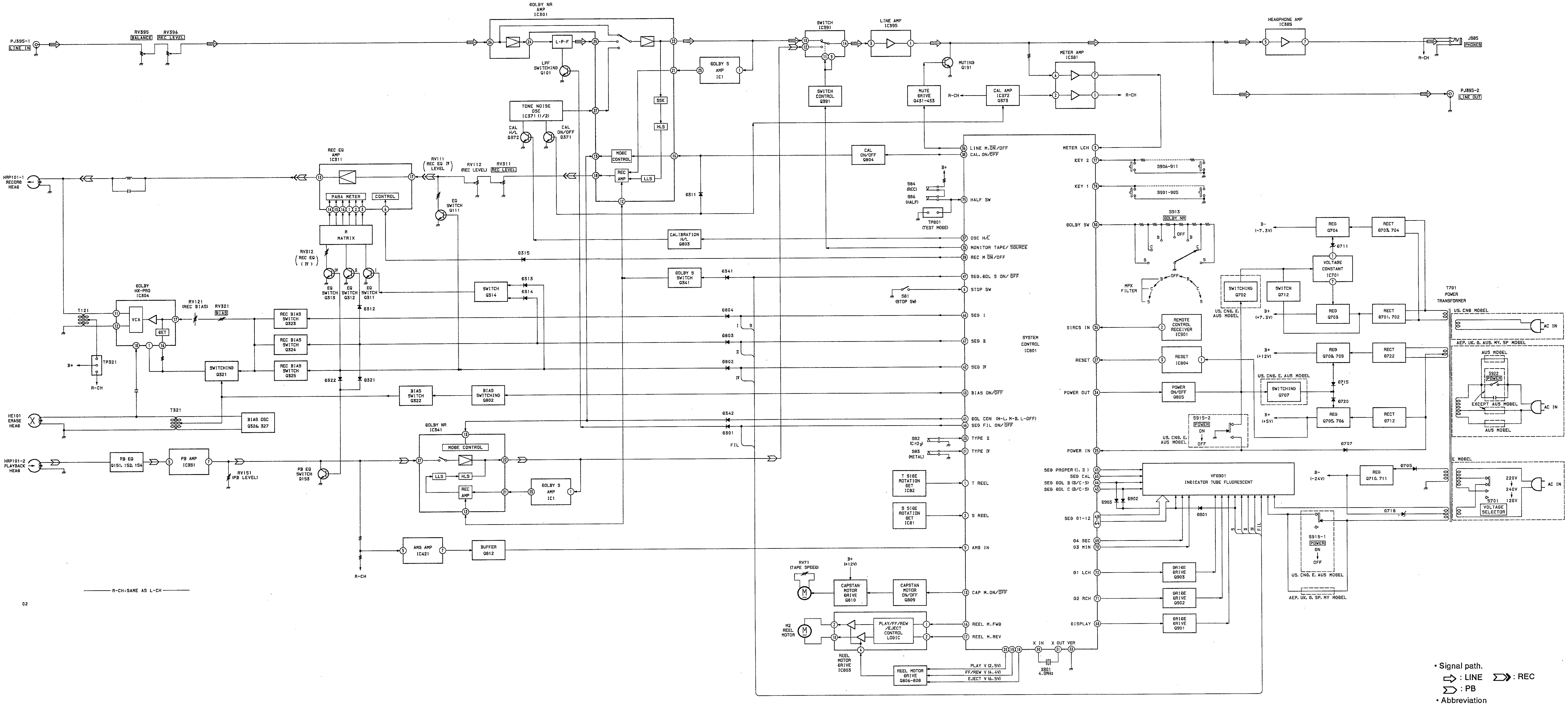
IC801 M38172M4-171FP (SYSTEM CONTROL/VFD901 DRIVE)

Pin No.	Pin name	I/O	Description
1	T • REEL	I	Take up reel rotation detection input.
2	S • REEL	I	Supply reel rotation detection input.
3	METER L-CH	I	Meter level L-CH input.
4	METER R-CH	I	Meter level R-CH input.
5	AMS • IN	I	AMS signal input terminal.
6	STOP SW	I	Mechanism stop switch input terminal.
7	CLOSE SW	–	Not used. (H level)
8	OPEN SW	–	Not used. (H level)
9	CAM • SW3	–	Not used. (H level)
10	CAM • SW2	–	Not used. (H level)
11	CAM • SW1	–	Not used. (H level)
12	CAM • SW0	–	Not used. (H level)
13	CAP • M • ON/$\overline{\text{OFF}}$	O	Capstan motor ON/OFF control. H : ON
14	ASIST M • UP	–	Not used. (L level)
15	ASIST M • DOWN	–	Not used. (L level)
16	REEL M • FWD	O	Reel motor FWD control.
17	REEL M • REV	O	Reel motor REW control.
18	EJECT • V (6.5V)	O	Reel motor eject control.
19	FF/REW • V (4.4V)	O	Reel motor FF/REW control.
20	PLAY • V (2.5V)	O	Reel motor play control.
21	TYPE • Ⅳ	I	Type Ⅳ SW input terminal.
22	HALF SW	–	Not used. (Open)
23	TYPE • Ⅱ	I	Type Ⅱ SW input terminal.
24	TAB • SW	–	Not used. (H level)
25	POWER IN	I	Power OFF detection terminal.
26	SIRCS IN	I	Sircs signal input terminal.
27	RESET	I	System reset terminal.
28	XC IN	–	Not used. (Open)
29	XC OUT	–	Not used. (Open)
30	X IN	I	System clock oscillator input. (4.0MHz)
31	X OUT	O	System clock oscillator output. (4.0MHz)
32	VSS	–	Ground.
33	VER 200/$\overline{\text{190}}$	I	Version selection input.
34	POWER OUT	O	Power hold output terminal.
35	MONITOR TAPE/$\overline{\text{SOURCE}}$	O	Audio mode select terminal.
36	LINE M • $\overline{\text{ON}}$/OFF	O	Line mute ON/OFF control.
37	OSC H/$\overline{\text{L}}$	O	OSC frequency H/L selection terminal.
38	CAL ON/$\overline{\text{OFF}}$	O	Calibration ON/OFF control.
39	REC M • $\overline{\text{ON}}$/OFF	O	REC mute ON/OFF control.
40	BIAS ON/$\overline{\text{OFF}}$	O	Bias ON/OFF control.

Pin No.	Pin name	I/O	Description
41	DOL • CON (H-C, M – B, L-OFF)	O	Dolby ON/OFF control.
42	SEG • Ⅳ	O	Bias EQ Ⅳ control.
43	SEG • DOL C (B/C • $\overline{\text{S}}$)	O	VFD segment drive (Dolby C).
44	SEG • DOL B (B/C • $\overline{\text{S}}$)	O	VFD segment drive (Dolby B).
45	SEG PROPER (Ⅰ , Ⅱ)	O	VFD segment drive (Type Ⅰ , Ⅱ).
46	SEG•FIL ON/$\overline{\text{OFF}}$	O	VFD segment drive (Filter).
47	SEG•DOL S ON/$\overline{\text{OFF}}$	O	VFD segment drive (Dolby S).
48		–	Not used. (Open)
49	SEG01	O	VFD segment drive.
50	SEG02	O	VFD segment drive.
51	SEG06	O	VFD segment drive.
52	SEG07	O	VFD segment drive.
53	SEG03	O	VFD segment drive.
54	SEG05	O	VFD segment drive.
55	SEG04	O	VFD segment drive.
56	SEG08	O	VFD segment drive.
57	SEG16	O	VFD segment drive.
58	SEG9	O	VFD segment drive.
59	SEG10	O	VFD segment drive.
60	SEG14	O	VFD segment drive.
61	SEG15	O	VFD segment drive.
62	SEG11	O	VFD segment drive.
63	SEG13	O	VFD segment drive.
64	SEG12	O	VFD segment drive.
65	SEG • CAL	O	VFD segment drive. (calibration)
66	SEG • Ⅰ	O	Bias EQ Ⅰ control.
67	SEG • Ⅱ	O	Bias EQ Ⅱ control.
68	G5-DISPLAY	O	VFD colum display.
69	G4-SEC	O	VFD colum SEC.
70	G3-MIN	O	VFD colum MIN.
71	G2-RCH	O	VFD colum R-CH.
72	G1-LCH	O	VFD colum L-CH.
73	VCC	–	Power supply. (+5V)
74	VEE	–	Power supply. (–24V)
75	AVSS	–	Analog for power supply. (Ground)
76	VREF	–	A/D referance voltage. (+5V)
77	KEY2	I	Key input terminal.
78	KEY1	I	Key input terminal.
79	HALF SW	I	Half pawl switch input terminal.
80	DOLBY SW	I	Dolby switch input terminal.

SECTION 5
DIAGRAMS

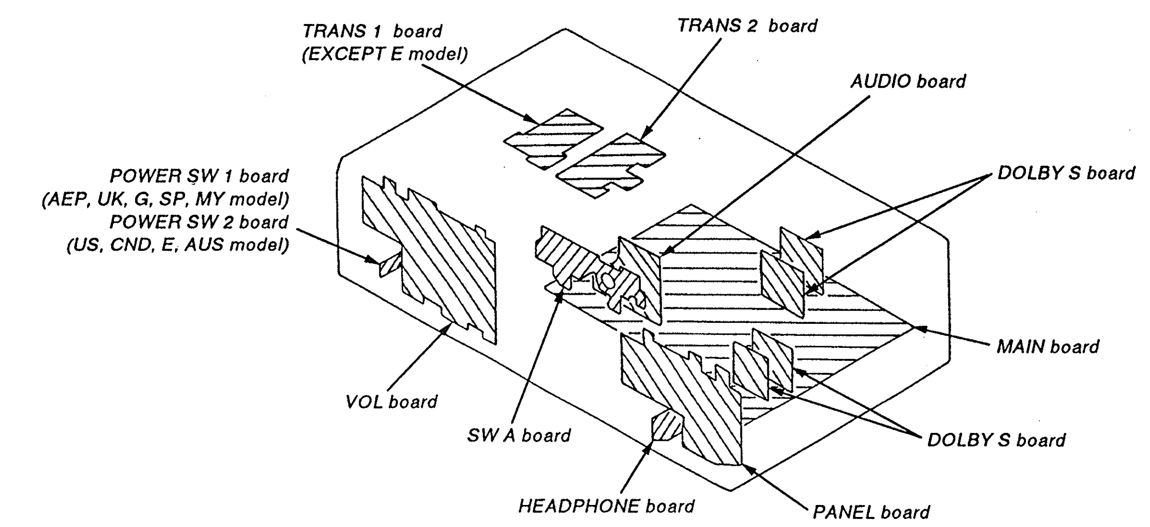
5-1. BLOCK DIAGRAM


PJ395-1
LINE IN
RV395 BALANCE
RV396 REC LEVEL
DOLBY NR AMP IC301
L·P·F
LPF SWITCHING Q101
TONE NOISE OSC IC371 (1/2)
CAL H/L Q372
CAL ON/OFF Q371
MODE CONTROL
REC AMP
SSK
HLS
LLS
DOLBY S AMP IC1
SWITCH IC391
SWITCH CONTROL Q391
LINE AMP IC395
MUTING Q191
MUTE DRIVE Q431-433
CAL AMP IC372 Q373
METER AMP IC381
R-CH
HEADPHONE AMP IC385
J385 PHONES
PJ395-2 LINE OUT
HRP101-1 RECORD HEAD
REC EQ AMP IC311
PARA METER
CONTROL
R MATRIX
RV111 (REC EQ IV LEVEL)
RV112 (REC LEVEL)
RV311 REC LEVEL
EQ SWITCH Q111
RV312 (REC EQ (IV))
EQ SWITCH Q313
EQ SWITCH Q312
EQ SWITCH Q311
SWITCH Q314
CAL ON/OFF Q804
CALIBRATION H/L Q803
DOLBY S SWITCH Q341
DOLBY HX-PRO IC304
VCA
DET
T121
TP321
RV121 (REC BIAS)
RV321 BIAS
REC BIAS SWITCH Q323
REC BIAS SWITCH Q324
REC BIAS SWITCH Q325
SWITCHING Q321
BIAS SWITCH Q322
BIAS SWITCHING Q802
HE101 ERASE HEAD
T321
BIAS OSC Q326, 327
HRP101-2 PLAYBACK HEAD
PB EQ Q151, 152, 154
PB AMP IC351
RV151 (PB LEVEL)
PB EQ SWITCH Q153
DOLBY NR IC341
AMS AMP IC421
BUFFER Q812
R-CH:SAME AS L-CH
LINE M.ON/OFF
CAL. ON/OFF
HALF SW
S84 (REC)
S84 (HALF)
TP801 (TEST MODE)
OSC H/L
MONITOR TAPE/SOURCE
REC M ON/OFF
SEG.DOL S ON/OFF
STOP SW
S81 (STOP SW)
SEG I
SEG II
SEG IV
BIAS ON/OFF
DOL CON (H-L, M-B, L-OFF)
SEG FIL ON/OFF
TYPE II
TYPE IV
S82 (CrO2)
S83 (METAL)
T SIDE ROTATION DET IC82
S SIDE ROTATION DET IC81
T REEL
S REEL
AMS IN
RV71 (TAPE SPEED)
CAPSTAN MOTOR DRIVE Q810
CAPSTAN MOTOR ON/OFF Q809
CAP M.ON/OFF
M2 REEL MOTOR
PLAY/FF/REW /EJECT CONTROL LOGIC
REEL MOTOR DRIVE IC803
REEL MOTOR DRIVE Q806-808
REEL M.FWD
REEL M.REV
PLAY V (2.5V)
FF/REW V (4.4V)
EJECT V (6.5V)
X IN
X OUT VER
X801 4.0MHz
SYSTEM CONTROL IC801
METER LCH
KEY 2
KEY 1
S906-911
S901-905
DOLBY SW
S913 DOLBY NR
MPX FILTER
SIRCS IN
REMOTE CONTROL RECEIVER IC901
RESET
RESET IC804
POWER OUT
POWER ON/OFF Q805
POWER IN
S915-2 POWER
SEG PROPER (I, II)
SEG CAL
SEG DOL B (B/C-S)
SEG DOL C (B/C-S)
SEG 01-12
VFD901 INDICATOR TUBE FLUORESCENT
D4 SEC
D3 MIN
D1 LCH
D2 RCH
DISPLAY
GRIDE DRIVE Q903
GRIDE DRIVE Q902
GRIDE DRIVE Q901
SWITCHING Q702
SWITCH Q712
VOLTAGE CONSTANT IC701
REG Q704
RECT D703, 704
REG Q703
RECT D701, 702
REG Q708, 709
RECT D722
SWITCHING Q707
REG Q705, 706
RECT D712
REG Q710, 711
B- (-7.3V)
B+ (+7.3V)
B+ (+12V)
B+ (+5V)
B- (-24V)
T701 POWER TRANSFORMER
US, CND MODEL
AEP, UK, G, AUS, MY, SP MODEL
AUS MODEL
S922 POWER
EXCEPT AUS MODEL
E MODEL
AC IN
220V
240V
120V
S701 VOLTAGE SELECTOR
S915-1 POWER
US, CND, E, AUS MODEL
AEP, UK, G, SP, MY MODEL

• Signal path.
⇨ : LINE ⋙ : REC
⋗ : PB

• Abbreviation
CND : Canadian SP : Singapore
AUS : Australian G : German
MY : Malaysia

5-2. CIRCUIT BOARDS LOCATION


TRANS 1 board
(EXCEPT E model)
TRANS 2 board
AUDIO board
DOLBY S board
POWER SW 1 board
(AEP, UK, G, SP, MY model)
POWER SW 2 board
(US, CND, E, AUS model)
MAIN board
DOLBY S board
VOL board
SW A board
HEADPHONE board
PANEL board

• SEMICONDUCTOR LOCATION

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D151	G-14	D715	D-16	IC801	G-18	Q352	H-13
D181	B-11	D716	D-15	IC803	G-15	Q371	B-2
D182	B-10	D717	E-17	IC804	G-17	Q372	B-14
D183	C-10	D718	E-16	IC901	D-2	Q373	D-10
D251	H-14	D719	E-17			Q391	H-11
D281	B-11	D720	D-17	Q101	C-12	Q431	B-11
D282	B-10	D721	E-16	Q111	C-16	Q432	B-11
D283	C-11	D722	E-19	Q112	C-17	Q433	B-12
D301	H-18	D723	D-13	Q151	G-14	Q702	E-14
D311	B-17	D724	D-14	Q152	G-14	Q703	D-13
D312	B-17	D801	G-17	Q153	G-12	Q704	F-13
D313	B-17	D802	G-20	Q154	G-14	Q705	D-16
D314	B-17	D803	G-19	Q191	B-12	Q706	E-17
D315	B-17	D804	F-20	Q201	D-12	Q707	D-16
D321	H-18	D901	H-24	Q211	C-16	Q708	A-17
D322	H-18	D902	H-24	Q212	D-17	Q709	D-15
D341	H-18	D903	I-24	Q251	H-14	Q710	E-17
D342	H-18			Q252	H-14	Q711	E-17
D371	B-13			Q253	H-12	Q712	E-14
D372	B-13	IC81	H-8	Q254	H-14	Q722	D-13
		IC82	H-7				
D373	B-14	IC301	C-13	Q291	B-11	Q802	H-17
D431	E-14	IC304	C-19	Q311	B-16	Q803	H-17
D701	E-15	IC311	C-16	Q312	B-17	Q804	H-17
D702	E-15			Q313	B-17	Q805	H-17
D703	F-15	IC341	G-11	Q314	B-16	Q806	G-16
		IC351	H-13				
D704	E-15	IC371	B-15	Q321	D-19	Q807	G-15
D705	E-17	IC372	D-11	Q322	D-18	Q808	H-15
D706	D-16	IC381	B-10	Q323	D-19	Q809	F-16
D707	E-19			Q324	D-20	Q810	G-15
D708	E-14	IC385	B-8	Q325	D-19	Q812	F-17
		IC391	D-11				
D709	E-14	IC395	C-11	Q326	C-19	Q901	I-24
D710	E-13	IC421	I-11	Q327	C-20	Q902	I-25
D711	F-13	IC701	E-13	Q341	H-12	Q903	I-25
D712	E-18			Q351	G-13		

Note:

- ○—— : parts extracted from the component side.
- ▨ : Pattern on the side which is seen.
- Abbreviation

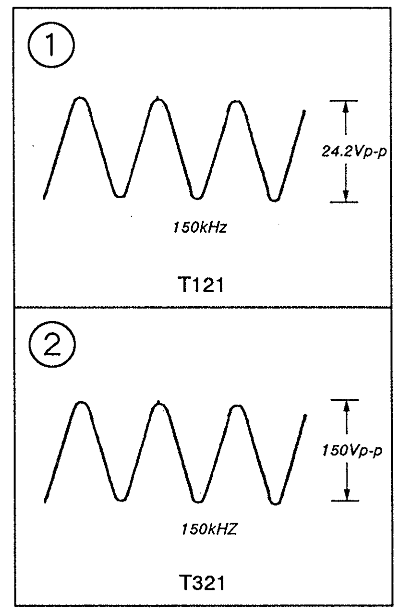
CND	: Canadian	SP	: Singapore
AUS	: Australian	G	: German
MY	: Malaysia		

5-3. PRINTED WIRING BOARDS (MAIN SECTION)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
A B C D E F G H I J
【VOL BOARD】(Included PANEL board)
【HEADPHONE BOARD】(Included MAIN board)
J385 PHONES
【MAIN BOARD】
PJ395 IN LINE OUT
DOLBY S BOARD CN1 (Page 29)
HRP101 (1/2) RECORD HEAD
HE101 ERASE HEAD
【TRANS 2 BOARD】(Included PANEL board)
T701 POWER TRANSFORMER
EXCEPT E MODEL
【TRANS 1 BOARD】(Included PANEL board)
CNP701
CNP703
AEP, UK, G, SP, MY MODEL
US, CND, AUS MODEL
LF701
CNP702
AC IN
* NOT REPLACEABLE: BUILT IN TRANSFORMER
E MODEL
S701 VOLTAGE
120V
240V
220V
【AUDIO BOARD】
CNP73
M1 REEL MOTOR
M2 CAPSTAN MOTOR
【SW A BOARD】
HRP101 (2/2) PLAYBACK HEAD
US, CND, E, AUS MODEL
【POWER SW 2 BOARD】(Included PANEL board)
AEP, UK, G, SP, MY MODEL
【POWER SW 1 BOARD】(Included PANEL board)
CNP704
S923 POWER
【PANEL BOARD】
S901 S907 S905 S904 S902 S906 S903
1-660-373-
1-660-377-
1-654-840-

5-4. SCHEMATIC DIAGRAM (MAIN (1/2) SECTION)

- **WAVEFORMS**



Note :

- All capacitors are in μ F unless otherwise noted. pF: μ μ F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- —WW∿— : fusible resistor.

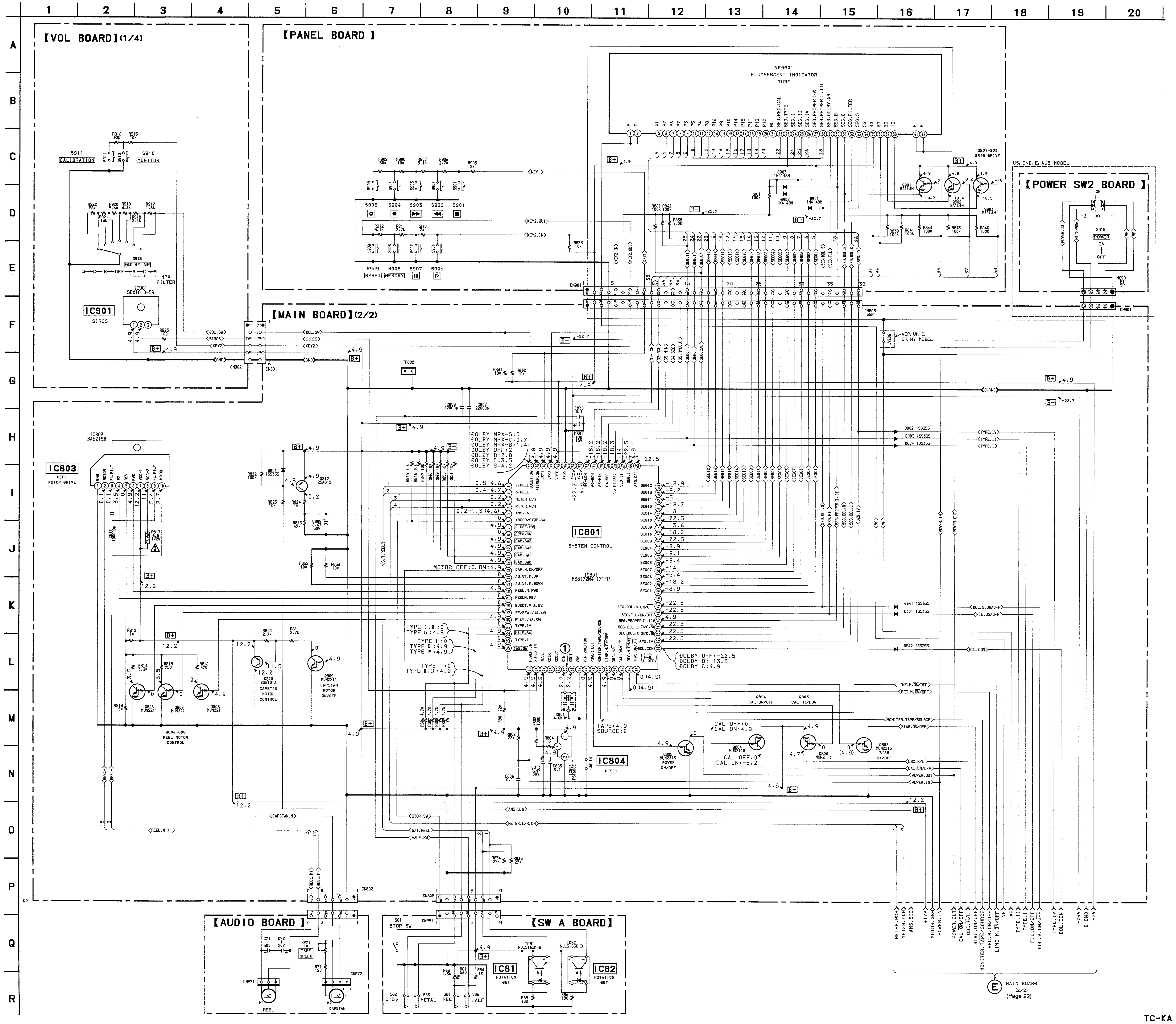
Note :	Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- **B+** : B+ Line
- **B −** : B − Line
- ▭ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : STOP
  ( ) : REC
- Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : LINE ⇒ : PB
  ⇛ : REC
- Abbreviation

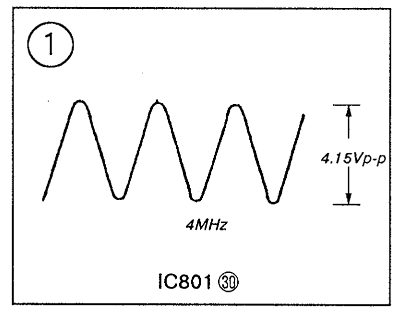
CND	: Canadian	SP	: Singapore
AUS	: Australian	G	: German
MY	: Malaysia		

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
【MAIN BOARD】 (1/2)
【VOL BOARD】 (2/4)
【VOL BOARD】 (3/4)
【VOL BOARD】 (4/4)
【HEADPHONE BOARD】
【POWER SW1 BOARD】
【TRANS 1 BOARD】
【TRANS 2 BOARD】
Ⓐ DOLBY S BOARD (CN 1) (Page 29)
Ⓑ DOLBY S BOARD (CN 1) (Page 29)
Ⓒ DOLBY S BOARD (CN 1) (Page 29)
Ⓓ DOLBY S BOARD (CN 1) (Page 29)
Ⓔ MAIN BOARD (2/2) (Page 27)
IC311 REC AMP
IC391 MONITOR SWITCH
IC395 BUFFER
IC301 DOLBY NR
IC371 CAL OSC
IC372 CAL AMP
IC381 METER AMP
IC385 HEADPHONE AMP
IC421 AMS AMP
IC304 DOLBY HX-PRO
IC351 PB AMP
IC341 DOLBY NR
IC701 VOLTAGE CONSTANT
HRP101 (1/2) RECORD HEAD
HE101 ERASE HEAD
HRP101 (2/2) PLAYBACK HEAD
Q311-314 REC EQ SWITCH
Q321, 323-325 REC BIAS SWITCH
Q324, 327 BIAS OSC
Q322 BIAS ON/OFF
Q151, 152, 154 PB AMP
Q251, 252, 254 PB AMP
Q351 RIPPLE FILTER
Q353 RIPPLE FILTER
Q341 DOLBY SWITCH
Q391 TAPE/SOURCE SWITCH
Q191, 291 MUTING
Q431-433 MUTE DRIVE
Q722 MUTE DRIVE
Q703 B+ REG
Q704 B- REG
Q705, 706 B+ REG
Q710, 711 B- REG
Q708, 709 B+ REG
Q702 POWER ON/OFF
Q707 POWER ON/OFF
S701 VOLTAGE SELECTOR
T701 POWER TRANSFORMER
PJ395
PHONES
BALANCE
REC LEVEL
REC EQ
BIAS
PB LEVEL
AC IN
E MODEL
EXCEPT E MODEL
US, CND, E, AUS MODEL
*NOT REPLACEABLE:BUILT IN TRANSFORMER
*NOT REPLACEABLE:BUILT IN TRANSFORMER
METER.RCH
METER.LCH
AMS.SIG
+12V
MOTOR.SNG
POWER.ON
POWER.OUT
CAL.ON/OFF
OSC.HI/LOW
BIAS.ON/OFF
MONITOR.TAPE/SOURCE
REC.M.ON/OFF
LINE.M.ON/OFF
VF
TYPE.II
TYPE.I
DOL.S.ON/OFF
FIL.ON/OFF
TYPE.IV
DOL.CON
+5V
-24V
-7.5
+7.4

5-5. SCHEMATIC DIAGRAM (MAIN (2/2) SECTION)


[VOL BOARD](1/4)
[PANEL BOARD]
VF8901 FLUORESCENT INDICATOR TUBE
[POWER SW2 BOARD]
[MAIN BOARD](2/2)
IC901 SIRCS
IC803 REEL MOTOR DRIVE
IC801 SYSTEM CONTROL
IC804 RESET
[AUDIO BOARD]
[SW A BOARD]
IC81 ROTATION DET
IC82 ROTATION DET
MAIN BOARD (2/2) (Page 23)

- **WAVEFORMS**



Note :

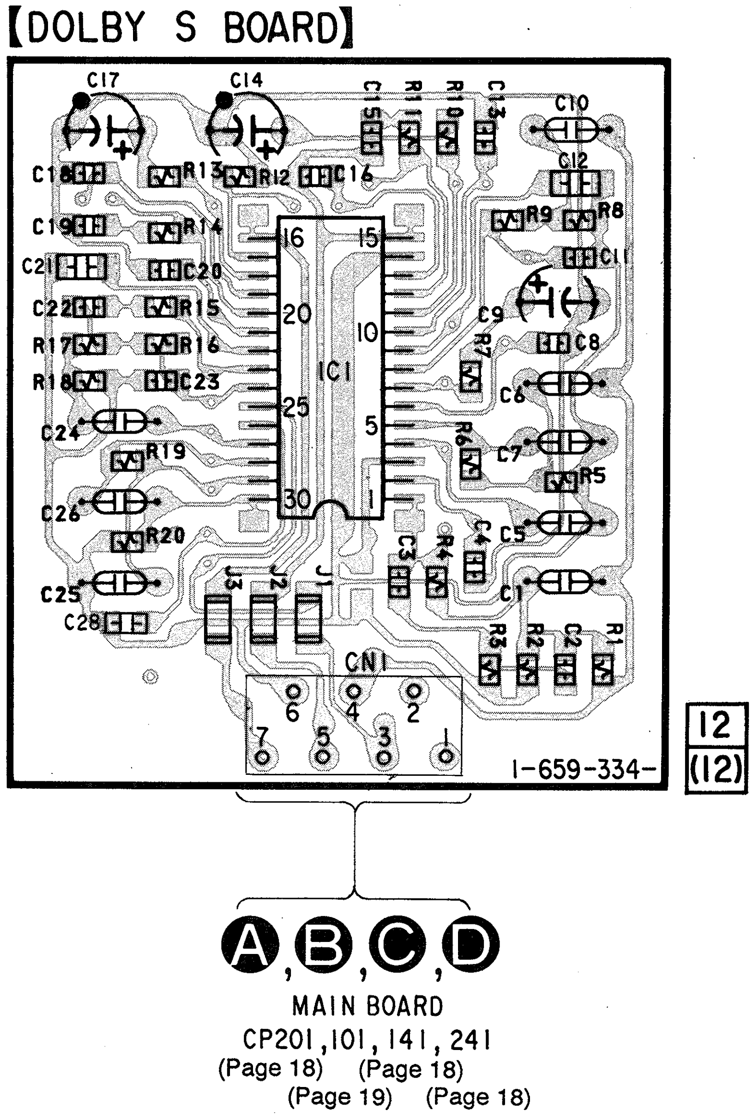
- All capacitors are in μ F unless otherwise noted. pF: μ μ F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- -▭- : fusible resistor.

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Note : Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- B+ : B+ Line
- B − : B − Line
- ☐ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : STOP
  (   ) : REC
- Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Abbreviation

CND	: Canadian	SP	: Singapore
AUS	: Australian	G	: German
MY	: Malaysia		

5-6. PRINTED WIRING BOARDS (DOLBY (S) BOARD)

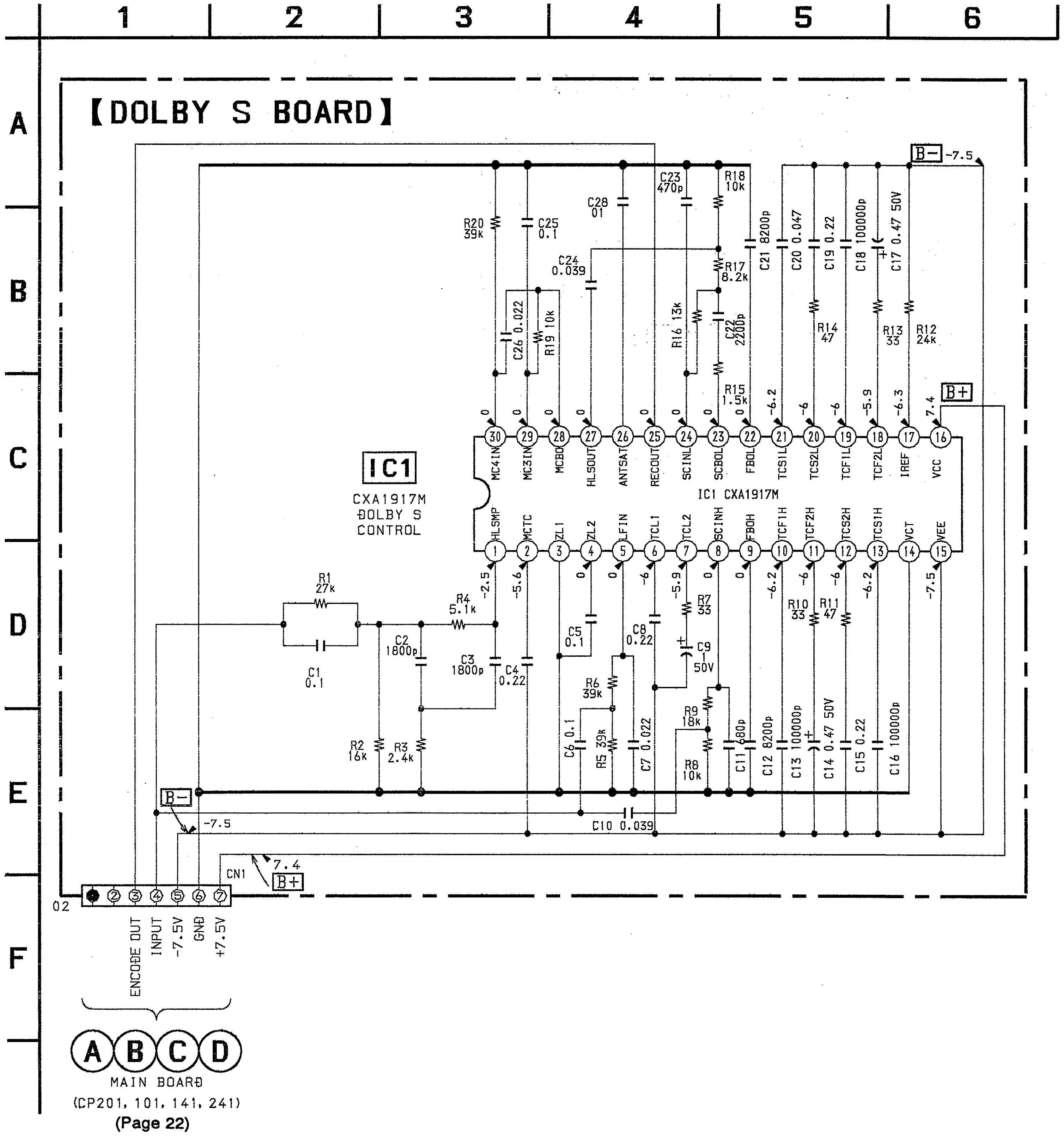

[DOLBY S BOARD]
C17
C14
C15
R11
R10
C13
C10
C18
R13
R12
C16
C12
R9
R8
C19
R14
C11
C21
C20
C22
R15
C9
R17
R16
C8
R18
C23
R7
C24
IC1
C6
16
15
20
10
25
5
30
1
R19
R6
C7
R5
C26
R20
C5
J3
J2
J1
C3
R4
C4
C25
C1
C28
R3
R2
C2
R1
CN1
6
4
2
7
5
3
1
1-659-334-
12
(12)
A,B,C,D
MAIN BOARD
CP201,101,141,241
(Page 18)
(Page 18)
(Page 19)
(Page 18)

Note:

- ○— : parts extracted from the component side.
- ░░░ : Pattern on the side which is seen.

5-7. SCHEMATIC DIAGRAM (DOLBY (S) BOARD)

- Refer to page 31 for IC Block Diagram.


1
2
3
4
5
6
A
B
C
D
E
F
[DOLBY S BOARD]
IC1
CXA1917M
DOLBY S
CONTROL
IC1 CXA1917M
MC4IN
MC3IN
MCBO
HLSOUT
ANTSAT
RECOUT
SCINL
SCBOL
FBOL
TCS1L
TCS2L
TCF1L
TCF2L
IREF
VCC
HLSMP
MCTC
ZL1
ZL2
LFIN
TCL1
TCL2
SCINH
FBOH
TCF1H
TCF2H
TCS2H
TCS1H
VCT
VEE
B−
-7.5
B+
7.4
R20 39k
C25 0.1
C28 01
C23 470p
R18 10k
C24 0.039
R17 8.2k
C21 8200p
C20 0.047
C19 0.22
C18 100000p
C17 0.47 50V
C26 0.022
R19 10k
R16 13k
C22 2200p
R15 1.5k
R14 47
R13 33
R12 24k
R1 27k
C1 0.1
R4 5.1k
C2 1800p
C3 1800p
C4 0.22
R2 16k
R3 2.4k
C5 0.1
C8 0.22
R7 33
C9 1 50V
R6 39k
R9 18k
R8 10k
C6 0.1
R5 39k
C7 0.022
C11 680p
C12 8200p
C13 100000p
C14 0.47 50V
C15 0.22
C16 100000p
R10 33
R11 47
C10 0.039
CN1
02
ENCODE OUT
INPUT
-7.5V
GND
+7.5V
A B C D
MAIN BOARD
(CP201, 101, 141, 241)

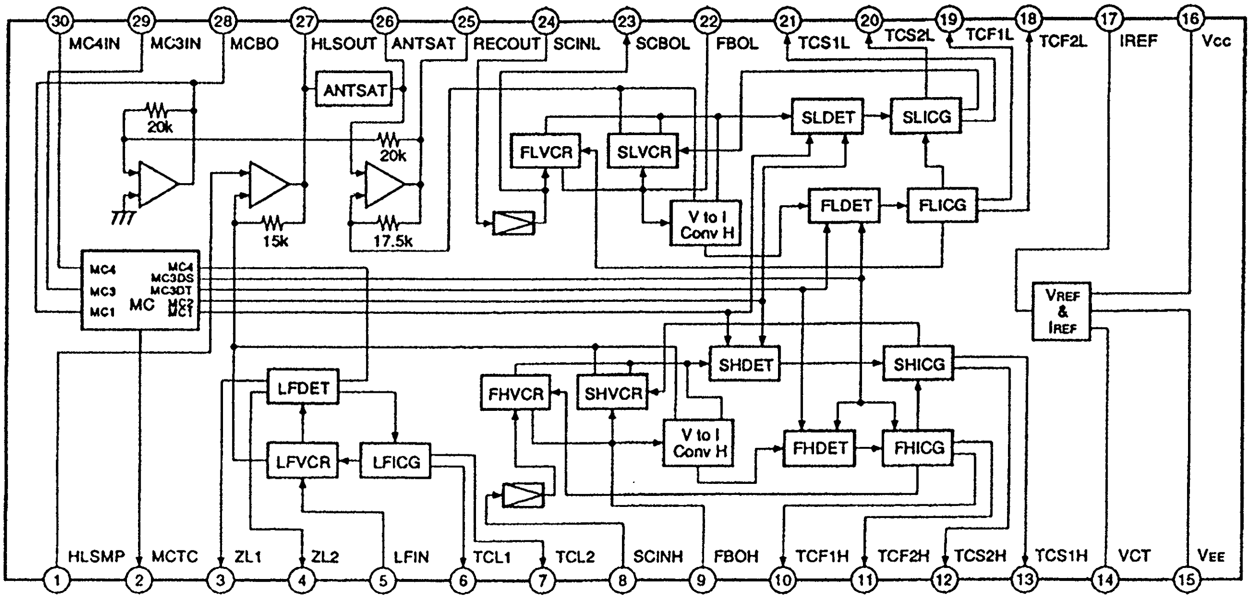
(Page 22)

Note :

- All capacitors are in μ F unless otherwise noted. pF: μ μ F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- % : indicates tolerance.
- **B+** : B+ Line
- **B −** : B − Line
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : STOP
- Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Voltage variations may be noted due to normal production tolerances.

• IC BLOCK DIAGRAM

IC1 CXA1917AM-T6



30 MC4IN
29 MC3IN
28 MCBO
27 HLSOUT
26 ANTSAT
25 RECOUT
24 SCINL
23 SCBOL
22 FBOL
21 TCS1L
20 TCS2L
19 TCF1L
18 TCF2L
17 IREF
16 Vcc
ANTSAT
20k
20k
15k
17.5k
FLVCR
SLVCR
SLDET
SLICG
V to I Conv H
FLDET
FLICG
MC4
MC3
MC1
MC
MC4
MC3DS
MC3DT
MC2
MC1
VREF & IREF
SHDET
SHICG
LFDET
FHVCR
SHVCR
V to I Conv H
FHDET
FHICG
LFVCR
LFICG
1 HLSMP
2 MCTC
3 ZL1
4 ZL2
5 LFIN
6 TCL1
7 TCL2
8 SCINH
9 FBOH
10 TCF1H
11 TCF2H
12 TCS2H
13 TCS1H
14 VCT
15 VEE

SECTION 6
EXPLODED VIEWS

NOTE :

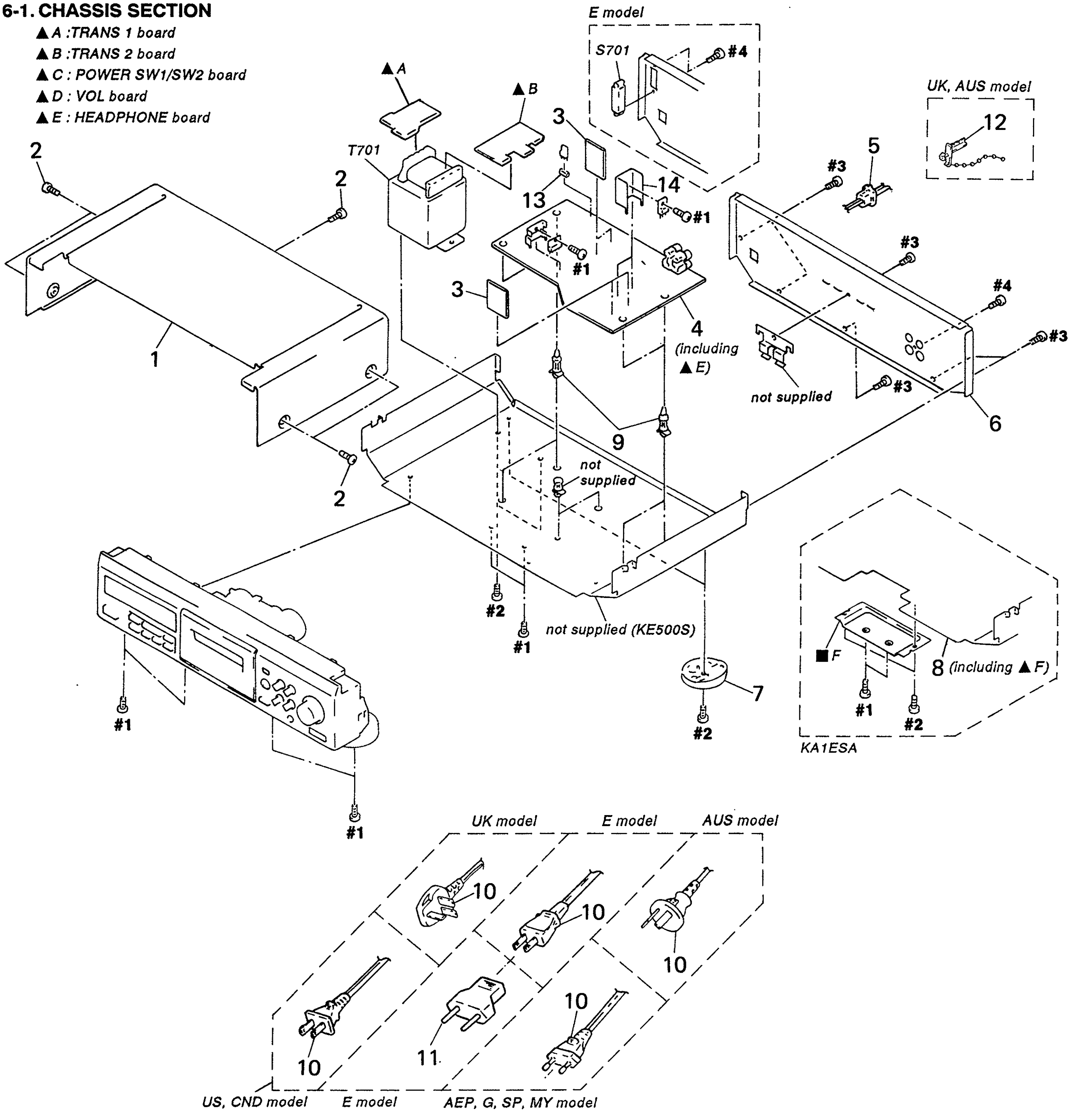
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviation

CND	: Canadian	SP	: Singapore
AUS	: Australian	G	: German
MY	: Malaysia		

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

6-1. CHASSIS SECTION

▲A :TRANS 1 board
▲B :TRANS 2 board
▲C : POWER SW1/SW2 board
▲D : VOL board
▲E : HEADPHONE board



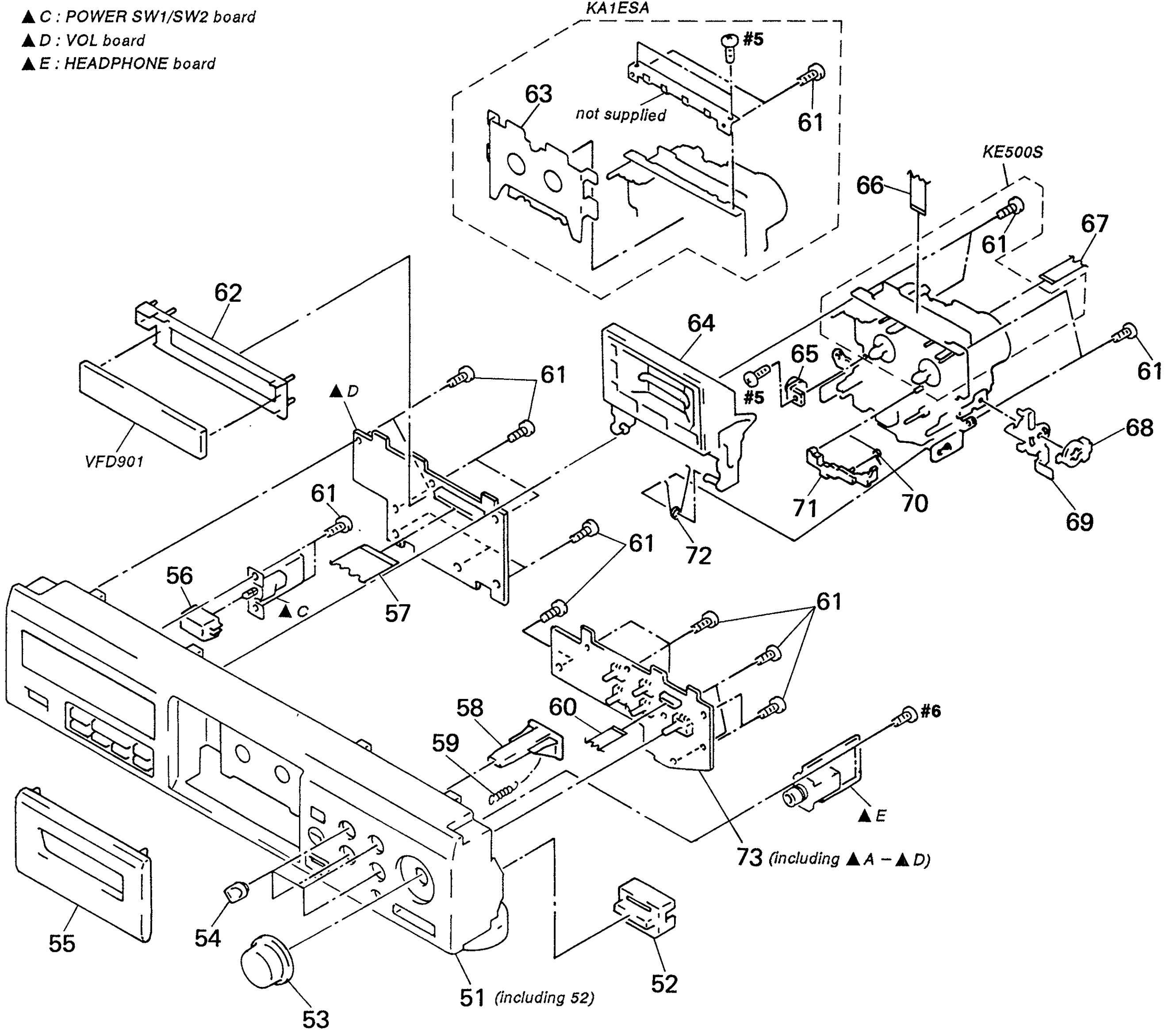
E model
S701
#4
UK, AUS model
12
▲A
▲B
3
2
T701
2
13
14
#1
#3
5
#1
#3
3
#4
4
(including ▲E)
#3
1
not supplied
#3
6
9
2
not
supplied
2
#2
#1
not supplied (KE500S)
■F
8 (including ▲F)
#1
#2
7
#1
#2
KA1ESA
#1
UK model
E model
AUS model
10
10
10
10
11
10
US, CND model
E model
AEP, G, SP, MY model

Ref. No.	Part No.	Description	Remark
* 1	3-931-432-01	CASE (410726)	
2	3-704-366-01	SCREW (CASE) (M3X8)	
* 3	A-2007-481-A	DOLBY-S BOARD, COMPLETE	
* 4	A-2007-530-A	MAIN BOARD, COMPLETE (KA1ESA)	
* 4	A-2007-531-A	MAIN BOARD, COMPLETE (KE500S:US,E,AUS)	
* 4	A-2007-533-A	MAIN BOARD, COMPLETE(KE500S:AEP,UK,G,SP,MY)	
* 5	3-703-244-00	BUSHING (2104),CORD (AEP,UK,G,AUS,SP,MY)	
5	3-703-571-11	BUSHING (S) (4516), CORD (US,CND,E)	
* 6	3-933-308-31	PANEL, BACK (KE500S:US)	
* 6	3-933-308-41	PANEL, BACK (KE500S:AEP,G,SP,MY)	
* 6	3-933-308-51	PANEL, BACK (KE500S:UK)	
* 6	3-933-308-61	PANEL, BACK (KE500S:E)	
* 6	3-933-308-91	PANEL, BACK (KE500S:AUS)	
* 6	3-933-309-01	PANEL, BACK (KA1ESA)	
7	X-4947-207-1	FOOT ASSY (F50150S) (EXCEPT US,CND)	
7	X-4947-208-1	FOOT ASSY (F50150S) (US,CND)	
* 8	A-2004-600-A	CHASSIS ASSY (KA1ESA)	

Ref. No.	Part No.	Description	Remark
* 9	3-346-265-31	HOLDER, PC BOARD	
⚠10	1-551-188-XX	CORD, POWER (E)	
⚠10	1-558-945-21	CORD, POWER (POLAR.SPT-1)(US,CND)	
⚠10	1-575-651-21	CORD, POWER (AEP,G,SP,MY)	
⚠10	1-696-586-11	CORD, POWER (UK)	
⚠10	1-696-845-11	CORD, POWER (AUS)	
⚠10	1-751-523-11	CORD, POWER (UK)	
⚠11	1-569-007-11	ADAPTER, CONVERSION 2P (E)	
12	4-956-370-12	BAND, PLUG FIXED (UK,AUS)	
13	3-923-762-11	HOLDER (TR)	
* 14	3-356-925-01	HEAT SINK	
⚠S701	1-692-155-11	SELECTOR, POWER VOLTAGE (VOLTAGE SELECTOR) (E)	
⚠T701	1-429-611-11	TRANSFORMER, POWER (US,CND)	
⚠T701	1-429-612-11	TRANSFORMER, POWER (EXCEPT US,CND,AUS,E)	
⚠T701	1-429-613-11	TRANSFORMER, POWER (E)	
⚠T701	1-429-659-11	TRANSFORMER, POWER (AUS)	

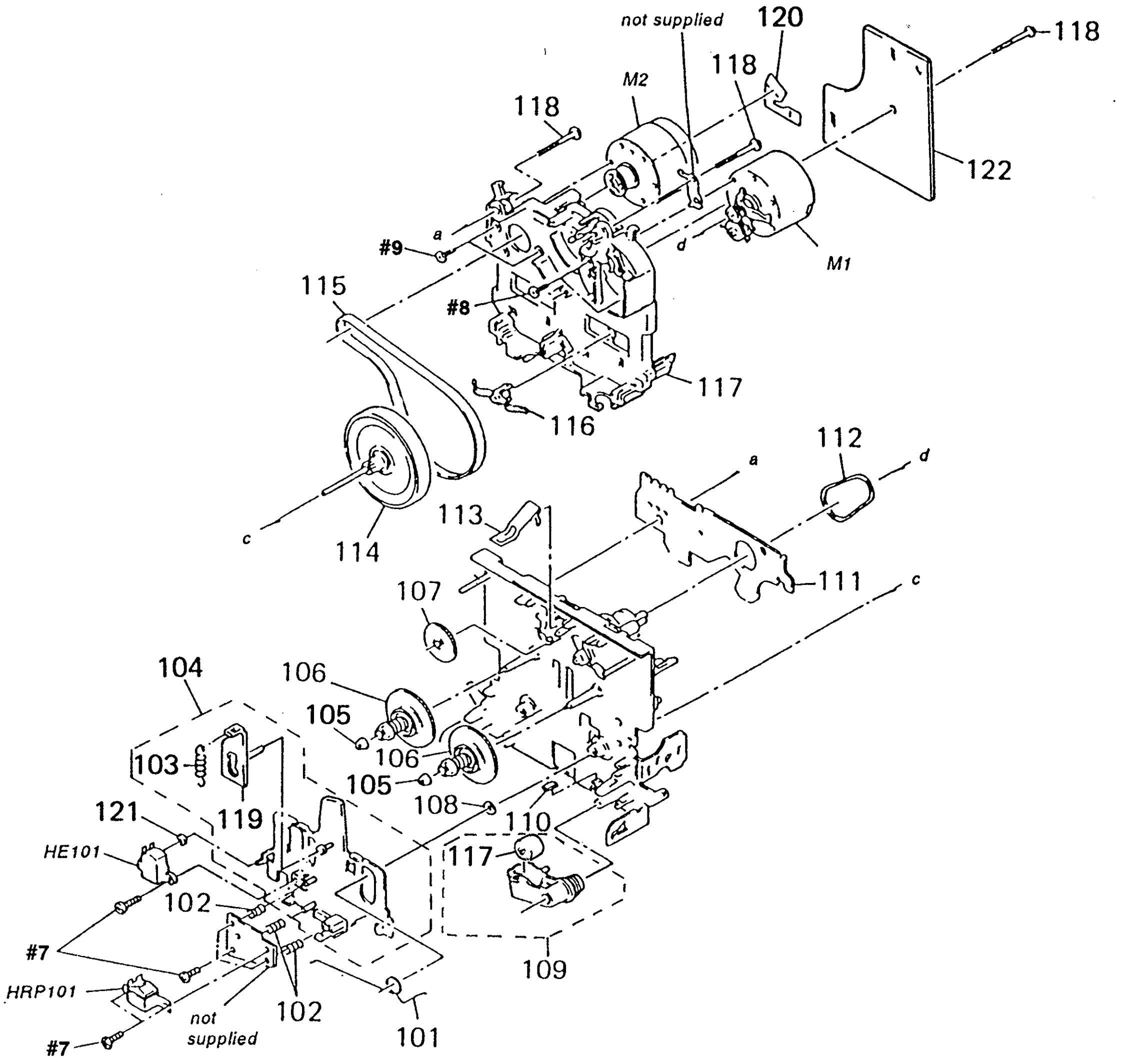
6-2. FRONT PANEL SECTION

▲A :TRANS 1 board
▲B :TRANS 2 board
▲C : POWER SW1/SW2 board
▲D : VOL board
▲E : HEADPHONE board


KA1ESA
#5
63
not supplied
61
KE500S
66
61
67
62
64
65
61
▲D
61
#5
68
VFD901
71
70
69
61
56
61
72
▲C
57
61
58
60
59
#6
▲E
73 (including ▲A – ▲D)
55
54
53
51 (including 52)
52

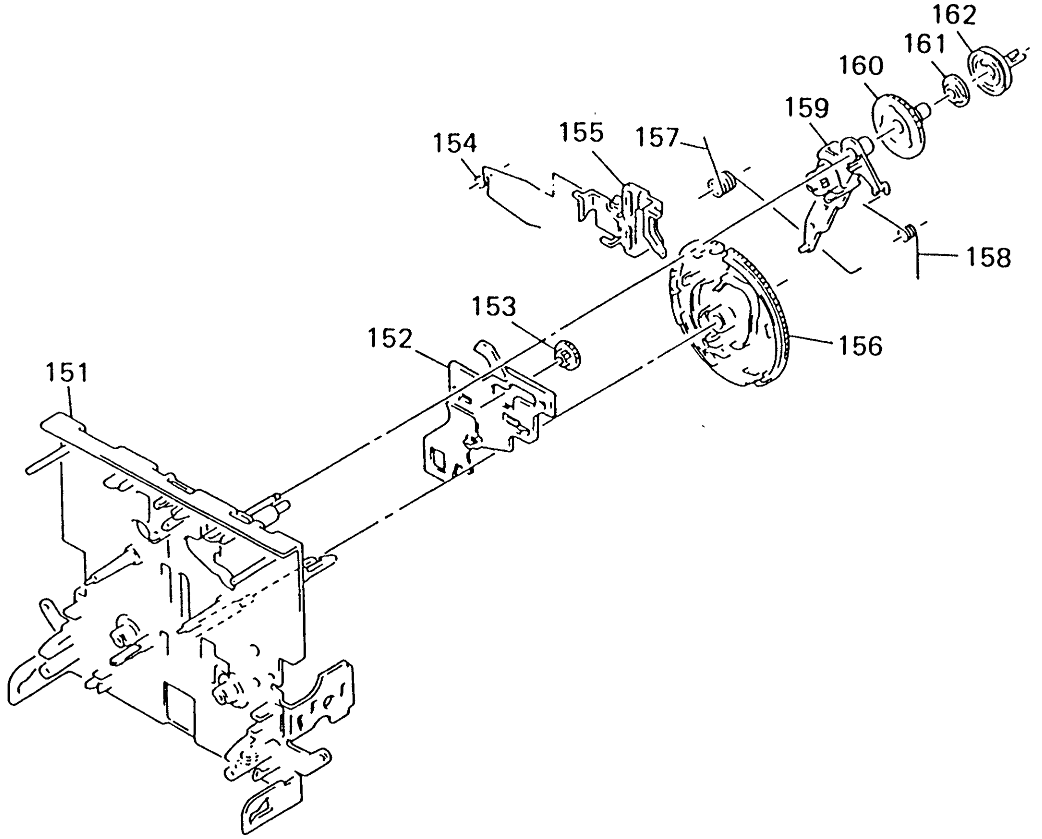
Ref. No.	Part No.	Description	Remark
51	X-3371-677-2	PANEL ASSY, FRONT (EXCEPT KA1ESA,KE500S: US)	
51	X-3371-678-2	PANEL ASSY, FRONT (KE500S:US)	
51	X-3371-681-2	PANEL ASSY, FRONT (KA1ESA)	
52	3-933-296-01	BUTTON (MONITOR)	
53	3-933-300-11	KNOB (REC)	
54	3-933-299-01	KNOB (DIA. 12)	
55	X-3371-684-2	LID ASSY, CASSETTE (KE500S)	
55	X-3371-686-1	LID ASSY, CASSETTE (KA1ESA)	
56	3-931-429-01	BUTTON (POWER)	
57	1-777-109-11	WIRE (FLAT TYPE) (39 CORE)	
58	3-933-295-01	BUTTON (EJECT)	
59	3-937-169-01	SPRING, TENSION	
60	1-777-110-11	WIRE (FLAT TYPE) (6 CORE)	
61	4-951-620-01	SCREW (2.6X8), +BVTP	
* 62	3-386-245-11	HOLDER (FL)	
63	3-367-711-01	RETAINER, CASSETTE (KA1ESA)	
64	X-3368-119-1	HOLDER (R) ASSY, CASSETTE	
65	3-354-963-01	DAMPER	
66	1-769-916-11	WIRE (FLAT TYPE) (9 CORE)	
67	1-769-878-11	WIRE (FLAT TYPE) (7 CORE)	
68	3-354-957-01	JOINT (LOCK LEVER)	
* 69	3-354-954-01	LEVER (LOCK LEVER R)	
70	3-354-962-01	SPRING (EJ SAFTY SPRING R)	
71	3-354-956-01	LEVER (EJ SAFTY LEVER R)	
72	3-354-960-01	SPRING (LOADING R), TORSION	
* 73	A-2007-529-A	PANEL BOARD, COMPLETE (US,CND,AUS)	
* 73	A-2007-532-A	PANEL BOARD, COMPLETE(AEP,UK,G,SP,MY)	
* 73	A-2007-534-A	PANEL BOARD, COMPLETE (E)	
VFD901	1-517-163-11	INDICATOR TUBE, FLUORESCENT	

6-3. MECHANISM SECTION 1
(TCM-190VB14)


not supplied
120
118
M2
118
122
#9
a
d
M1
115
#8
117
116
112
a
d
113
c
114
111
107
c
104
106
105
103
106
105
121
119
108
110
HE101
117
102
#7
109
HRP101
102
not supplied
#7
101

Ref. No.	Part No.	Description	Remark
101	3-911-014-01	SPRING, TORSION	
102	3-356-659-11	SPRING (RPH), COMPRESSION	
103	3-363-868-01	SPRING (HEAD CHASSIS), TENSION	
* 104	X-3369-024-1	SLIDER (HEAD CHASSIS) ASSY	
105	3-362-308-01	CAP (REEL)	
106	X-3366-971-1	TABLE ASSY (B), REEL	
107	3-359-424-01	GEAR (REV GEAR)	
108	3-356-713-01	WASHER	
109	X-3366-047-1	LEVER (PINCH F) ASSY	
110	3-359-469-01	SPACER	
* 111	1-634-841-14	SW A BOARD	
112	3-359-466-01	BELT (FR), SQUARE	
113	3-359-430-01	SPRING(CASSETTE RETAINER),LEAF	
114	X-3368-368-1	FLYWHEEL (FWD) COMPLETE ASSY	
115	3-937-332-01	BELT (CAPSTAN)	
116	3-575-321-00	RETAINER, THRUST, CAPSTAN	
117	3-355-808-02	PINCH ROLLER	
118	3-359-414-01	SCREW (+PTPWH 2X23)	
* 119	X-3368-865-1	SLIDER (LIMITER) ASSY	
120	1-638-983-11	MOTOR FLEXIBLE BOARD	
121	3-701-437-11	WASHER	
* 122	1-634-840-21	AUDIO BOARD	
HE101	1-543-673-11	HEAD, MAGNETIC (ERASE)	
HRP101	1-543-733-11	HEAD,MAGNETIC(RECORD/PLAYBACK)	
M1	X-3363-501-2	MOTOR ASSY(REEL)	
M2	X-3368-855-1	MOTOR ASSY(CAPSTAN)	

6-4. MECHANISM SECTION 2
(TCM-190VB14)



Ref. No.	Part No.	Description	Remark
151	X-3368-719-2	CHASSIS(ONE)ASSY,MECHANICAL	
152	3-359-415-11	SLIDER (TRIGGER SLIDER)	
153	3-359-448-01	GEAR (TRIGGER)	
154	3-359-454-01	SPRING, TORSION	
155	3-359-429-11	SLIDER (BRAKE PLATE)	
156	3-936-483-01	GEAR (CAM GEAR)	

Ref. No.	Part No.	Description	Remark
157	3-359-456-01	SPRING(TRIGGER SPRING),TORSION	
158	3-924-185-11	SPRING (FR ARM), TORSION	
159	X-3366-569-1	ARM ASSY, FR	
160	3-359-419-11	GEAR (FR GEAR)	
161	3-359-421-01	CLUTCH (REEL DISK)	
162	3-359-418-01	PULLEY (FR PULLEY)	

SECTION 7
ELECTRICAL PARTS LIST

AUDIO **DOLBY S**

NOTE :

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE :Metal oxide-film resistor
  F : nonflammable
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- SEMICONDUCTORS
  In each case, u : µ , for example :
  uA.... : µ A.... , uPA.... : µ PA....
  uPB.... : µ PB.... , uPC.... : µ PC....
  uPD.... : µ PD....
- CAPACITORS
  uF : µ F
- COILS
  uH : µ H
- Abbreviation
  CND : Canadian
  AUS : Australian
  MY : Malaysia
  SP : Singapore
  G : German

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	1-634-840-21	AUDIO BOARD ***********			
		< CAPACITOR >			
C71	1-124-903-11	ELECT	1uF	20%	50V
C72	1-124-903-11	ELECT	1uF	20%	50V
		< CONNECTOR >			
* CNP71	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P			
CNP72	1-764-902-11	CONNECTOR, FFC/FPC 4P			
* CNP73	1-568-826-11	SOCKET, CONNECTOR 7P			
		< RESISTOR >			
R71	1-249-406-11	CARBON	120	5%	1/4W
		< VARIABLE RESISTOR >			
RV71	1-241-761-11	RES, ADJ, CARBON 1K (TEPE SPEED)			
**					
*	A-2007-481-A	DOLBY S BOARD, COMPLETE ************************			
		< CAPACITOR >			
C1	1-136-165-00	FILM	0.1uF	5%	50V
C2	1-163-012-00	CERAMIC CHIP	0.0018uF	10%	50V
C3	1-163-012-00	CERAMIC CHIP	0.0018uF	10%	50V
C4	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C5	1-136-165-00	FILM	0.1uF	5%	50V
C6	1-136-165-00	FILM	0.1uF	5%	50V
C7	1-137-372-11	FILM	0.022uF	5%	50V
C8	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C9	1-126-301-11	ELECT	1uF	20%	50V
C10	1-137-442-11	FILM	0.039uF	5%	50V
C11	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C12	1-164-717-11	CERAMIC CHIP	0.0082uF	5%	50V
C13	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C14	1-124-465-00	ELECT	0.47uF	20%	50V
C15	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C16	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C17	1-124-465-00	ELECT	0.47uF	20%	50V
C18	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C19	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C20	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C21	1-164-717-11	CERAMIC CHIP	0.0082uF	5%	50V
C22	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C23	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C24	1-137-442-11	FILM	0.039uF	5%	50V
C25	1-136-165-00	FILM	0.1uF	5%	50V
C26	1-137-372-11	FILM	0.022uF	5%	50V
C28	1-163-038-91	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
CN1	1-695-092-11	SOCKET, CONNECTOR 7P			
		< IC >			
IC1	8-752-076-30	IC CXA1917AM-T6			
		< JUMPER RESISTOR >			
J1	1-216-296-00	METAL CHIP	0	5%	1/8W
J2	1-216-296-00	METAL CHIP	0	5%	1/8W
J3	1-216-296-00	METAL CHIP	0	5%	1/8W
		< RESISTOR >			
R1	1-216-685-11	METAL CHIP	27K	0.5%	1/10W
R2	1-208-811-11	METAL GLAZE	16K	2%	1/10W
R3	1-208-791-11	METAL GLAZE	2.4K	2%	1/10W
R4	1-208-799-11	METAL GLAZE	5.1K	2%	1/10W
R5	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R6	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R7	1-216-615-11	METAL CHIP	33	0.5%	1/10W
R8	1-208-462-41	METAL GLAZE	10K	2%	1/10W
R9	1-208-812-11	METAL GLAZE	18K	2%	1/10W
R10	1-216-615-11	METAL CHIP	33	0.5%	1/10W
R11	1-216-619-11	METAL CHIP	47	0.5%	1/10W

Ref. No.	Part No.	Description			Remark
R12	1-216-684-11	METAL CHIP	24K	0.5%	1/10W
R13	1-216-615-11	METAL CHIP	33	0.5%	1/10W
R14	1-216-619-11	METAL CHIP	47	0.5%	1/10W
R15	1-216-655-11	METAL CHIP	1.5K	0.5%	1/10W
R16	1-216-678-11	METAL CHIP	13K	0.5%	1/10W
R17	1-216-673-11	METAL CHIP	8.2K	0.5%	1/10W
R18	1-208-462-41	METAL GLAZE	10K	2%	1/10W
R19	1-208-462-41	METAL GLAZE	10K	2%	1/10W
R20	1-216-689-11	METAL CHIP	39K	0.5%	1/10W

****

*	A-2007-530-A	MAIN BOARD, COMPLETE (KA1ESA)
*	A-2007-531-A	MAIN BOARD, COMPLETE (KE500S:US,E,AUS)
*	A-2007-533-A	MAIN BOARD, COMPLETE (AEP,UK,G,SP,MY)

****

HEADPHONE BOARD

****

*	3-356-925-01	HEAT SINK
	3-923-762-11	HOLDER (TR)
	7-682-548-04	SCREW +BVTT 3X8 (S)

< CAPACITOR >

Ref. No.	Part No.	Description			Remark
C101	1-126-965-11	ELECT	22uF	20%	50V
C102	1-136-495-11	FILM	0.068uF	5%	50V
C103	1-136-165-00	FILM	0.1uF	5%	50V
C104	1-126-964-11	ELECT	10uF	20%	50V
C105	1-163-014-00	CERAMIC CHIP	0.0027uF	5%	50V
C106	1-126-963-11	ELECT	4.7uF	20%	50V
C111	1-126-963-11	ELECT	4.7uF	20%	50V
C112	1-136-173-00	FILM	0.47uF	5%	50V
C113	1-126-964-11	ELECT	10uF	20%	50V
C114	1-137-366-11	FILM	0.0022uF	5%	50V
C118	1-124-902-00	ELECT	0.47uF	20%	50V
C121	1-107-597-11	CERAMIC	22PF	5%	500V
C122	1-137-428-11	FILM	180PF	5%	50V
C123	1-137-431-11	FILM	560PF	5%	50V
C124	1-101-810-00	CERAMIC	100PF	5%	500V
C125	1-136-803-11	FILM	560PF	5%	630V
C126	1-136-161-00	FILM	0.047uF	5%	50V
C127	1-136-157-00	FILM	0.022uF	5%	50V
C128	1-136-153-00	FILM	0.01uF	5%	50V
C141	1-124-925-11	ELECT	2.2uF	20%	50V
C142	1-136-165-00	FILM	0.1uF	5%	50V
C143	1-136-495-11	FILM	0.068uF	5%	50V
C151	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C152	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C153	1-104-665-11	ELECT	100uF	20%	25V
C154	1-126-968-11	ELECT	100uF	20%	50V
C155	1-136-157-00	FILM	0.022uF	5%	50V
C156	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C157	1-126-964-11	ELECT	10uF	20%	50V
C158	1-136-158-00	FILM	0.027uF	5%	50V
C159	1-102-518-11	CERAMIC	33PF	5%	50V
C160	1-137-434-11	FILM	0.0018uF	5%	50V
C161	1-137-434-11	FILM	0.0018uF	5%	50V
C181	1-124-925-11	ELECT	2.2uF	20%	100V
C191	1-126-963-11	ELECT	4.7uF	20%	50V
C201	1-126-965-11	ELECT	22uF	20%	50V
C202	1-136-495-11	FILM	0.068uF	5%	50V
C203	1-136-165-00	FILM	0.1uF	5%	50V
C204	1-126-964-11	ELECT	10uF	20%	50V
C205	1-163-014-00	CERAMIC CHIP	0.0027uF	5%	50V
C206	1-126-963-11	ELECT	4.7uF	20%	50V
C211	1-126-963-11	ELECT	4.7uF	20%	50V
C212	1-136-173-00	FILM	0.47uF	5%	50V
C213	1-126-964-11	ELECT	10uF	20%	50V
C214	1-137-366-11	FILM	0.0022uF	5%	50V
C218	1-124-902-00	ELECT	0.47uF	20%	50V
C221	1-107-597-11	CERAMIC	22PF	5%	500V
C222	1-137-428-11	FILM	180PF	5%	50V
C223	1-137-431-11	FILM	560PF	5%	50V
C224	1-101-810-00	CERAMIC	100PF	5%	500V
C225	1-136-803-11	FILM	560PF	5%	630V
C226	1-136-161-00	FILM	0.047uF	5%	50V
C227	1-136-157-00	FILM	0.022uF	5%	50V
C228	1-136-153-00	FILM	0.01uF	5%	50V
C241	1-124-925-11	ELECT	2.2uF	20%	50V
C242	1-136-165-00	FILM	0.1uF	5%	50V
C243	1-136-495-11	FILM	0.068uF	5%	50V
C251	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C252	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C253	1-104-665-11	ELECT	100uF	20%	25V
C254	1-126-968-11	ELECT	100uF	20%	50V
C255	1-136-157-00	FILM	0.022uF	5%	50V
C256	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C257	1-126-964-11	ELECT	10uF	20%	50V
C258	1-136-158-00	FILM	0.027uF	5%	50V
C259	1-102-518-11	CERAMIC	33PF	5%	50V
C260	1-137-434-11	FILM	0.0018uF	5%	50V
C261	1-137-434-11	FILM	0.0018uF	5%	50V
C271	1-126-964-11	ELECT	10uF	20%	50V
C272	1-124-925-11	ELECT	2.2uF	20%	100V
C281	1-124-925-11	ELECT	2.2uF	20%	100V
C291	1-126-963-11	ELECT	4.7uF	20%	50V
C301	1-126-965-11	ELECT	22uF	20%	50V
C302	1-126-965-11	ELECT	22uF	20%	50V
C303	1-124-903-11	ELECT	1uF	20%	50V
C311	1-124-903-11	ELECT	1uF	20%	50V
C319	1-126-964-11	ELECT	10uF	20%	50V
C321	1-126-967-11	ELECT	47uF	20%	35V
C322	1-126-967-11	ELECT	47uF	20%	35V
C323	1-107-584-11	CERAMIC	4PF	0.25PF	500V
C324	1-136-558-11	FILM	0.0039uF	5%	630V
C325	1-126-965-11	ELECT	22uF	20%	50V

Ref. No.	Part No.	Description			Remark
C326	1-106-359-00	MYLAR	4700PF	5%	200V
C327	1-106-349-00	MYLAR	0.0018uF	5%	100V
C328	1-106-349-00	MYLAR	0.0018uF	5%	100V
C343	1-124-925-11	ELECT	2.2uF	20%	100V
C351	1-126-965-11	ELECT	22uF	20%	50V
C352	1-126-965-11	ELECT	22uF	20%	50V
C371	1-130-494-11	MYLAR	0.082uF	5%	50V
C372	1-137-436-11	FILM	0.0039uF	5%	50V
C386	1-126-923-11	ELECT	220uF	20%	10V
C387	1-126-923-11	ELECT	220uF	20%	10V
C421	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C422	1-163-033-91	CERAMIC CHIP	0.022uF		50V
C423	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C424	1-124-925-11	ELECT	2.2uF	20%	100V
C431	1-126-916-11	ELECT	1000uF	20%	6.3V
C701	1-126-768-11	ELECT	2200uF	20%	16V
C702	1-126-936-11	ELECT	3300uF	20%	16V
C703	1-104-664-11	ELECT	47uF	20%	25V
C704	1-126-027-11	ELECT	1000uF	20%	25V
C705	1-126-027-11	ELECT	1000uF	20%	25V
C706	1-126-968-11	ELECT	100uF	20%	50V
C707	1-126-964-11	ELECT	10uF	20%	50V
C708	1-126-937-11	ELECT	4700uF	20%	16V
C709	1-126-964-11	ELECT	10uF	20%	50V
C710	1-126-963-11	ELECT	4.7uF	20%	50V
C711	1-126-967-11	ELECT	47uF	20%	35V
C712	1-126-927-11	ELECT	2200uF	20%	10V
C713	1-124-564-11	ELECT	4700uF	20%	25V
C715	1-126-964-11	ELECT	10uF	20%	50V
C716	1-126-768-11	ELECT	2200uF	20%	16V
C805	1-136-165-00	FILM	0.1uF	5%	50V
C806	1-136-165-00	FILM	0.1uF	5%	50V
C807	1-163-033-91	CERAMIC CHIP	0.022uF		50V
C808	1-163-033-91	CERAMIC CHIP	0.022uF		50V
C809	1-124-902-00	ELECT	0.47uF	20%	50V
C811	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C813	1-124-902-00	ELECT	0.47uF	20%	50V
C830	1-136-165-00	FILM	0.1uF	5%	50V
C831	1-126-933-11	ELECT	100uF	20%	10V
		< CONNECTOR >			
CN321	1-506-468-11	PIN, CONNECTOR 3P			
CN701	1-766-272-11	PIN, CONNECTOR (PC BOARD) 10P			
CN801	1-568-825-11	CONNECTOR, FFC/FPC 6P			
CN802	1-568-826-11	CONNECTOR, FFC/FPC 7P			
CN803	1-750-414-11	CONNECTOR, FFC/FPC 9P			
* CN804	1-568-954-11	PIN, CONNECTOR 5P (US,E,AUS)			
CN805	1-778-065-11	SOCKET, CONNECTOR 39P			
CNP311	1-764-328-11	PIN, CONNECTOR (PCB)(V TYPE)5P			
* CNP321	1-560-062-00	PIN, CONNECTOR 4P			
* CNP322	1-560-060-00	PIN, CONNECTOR 2P			
* CNP351	1-560-062-00	PIN, CONNECTOR 4P			
* CNP376	1-568-954-11	PIN, CONNECTOR 5P			
* CNP398	1-691-462-11	PIN, CONNECTOR (PC BOARD) 6P			
CP101	1-695-087-11	PIN, CONNECTOR (PC BOARD) 7P			
CP141	1-695-087-11	PIN, CONNECTOR (PC BOARD) 7P			
CP201	1-695-087-11	PIN, CONNECTOR (PC BOARD) 7P			
CP241	1-695-087-11	PIN, CONNECTOR (PC BOARD) 7P			
		< DIODE >			
D151	8-719-019-12	DIODE ZSML-5.6X-T1			
D181	8-719-988-62	DIODE 1SS355			
D182	8-719-988-62	DIODE 1SS355			
D183	8-719-019-12	DIODE ZSML-5.6X-T1			
D251	8-719-019-12	DIODE ZSML-5.6X-T1			
D281	8-719-988-62	DIODE 1SS355			
D282	8-719-988-62	DIODE 1SS355			
D283	8-719-019-12	DIODE ZSML-5.6X-T1			
D301	8-719-988-62	DIODE 1SS355			
D311	8-719-988-62	DIODE 1SS355			
D312	8-719-988-62	DIODE 1SS355			
D313	8-719-988-62	DIODE 1SS355			
D314	8-719-988-62	DIODE 1SS355			
D315	8-719-988-62	DIODE 1SS355			
D321	8-719-988-62	DIODE 1SS355			
D322	8-719-988-62	DIODE 1SS355			
D341	8-719-988-62	DIODE 1SS355			
D342	8-719-988-62	DIODE 1SS355			
D371	8-719-988-62	DIODE 1SS355			
D372	8-719-988-62	DIODE 1SS355			
D373	8-719-988-62	DIODE 1SS355			
D431	8-719-988-62	DIODE 1SS355			
D701	8-719-200-02	DIODE 10E2			
D702	8-719-200-02	DIODE 10E2			
D703	8-719-200-02	DIODE 10E2			
D704	8-719-200-02	DIODE 10E2			
D705	8-719-200-02	DIODE 10E2			
D706	8-719-988-62	DIODE 1SS355 (US,CND,E,AUS)			
D707	8-719-988-62	DIODE 1SS355			
D708	8-719-988-62	DIODE 1SS355 (US,CND,E,AUS)			
D709	8-719-019-12	DIODE ZSML-5.6X-T1			
D710	8-719-019-12	DIODE ZSML-5.6X-T1			
D711	8-719-019-12	DIODE ZSML-5.6X-T1			
D712	8-719-200-02	DIODE 10E2			
D715	8-719-988-62	DIODE 1SS355 (US,CND,E,AUS)			
D716	8-719-019-46	DIODE ZSML-12Z-T1			
D717	8-719-988-62	DIODE 1SS355			
D718	8-719-019-25	DIODE ZSML-7.5Y-T1			
D719	8-719-019-18	DIODE ZSML-6.2Z-T1			
D720	8-719-988-62	DIODE 1SS355 (US,CND,E,AUS)			
D721	8-719-988-62	DIODE 1SS355			

MAIN HEADPHONE

Ref. No.	Part No.	Description	Remark
D722	8-719-025-03	DIODE RBA-402-SL	
D723	8-719-019-12	DIODE ZSML-5.6X-T1	
D724	8-719-988-62	DIODE 1SS355	
D801	8-719-988-62	DIODE 1SS355	
D802	8-719-988-62	DIODE 1SS355	
D803	8-719-988-62	DIODE 1SS355	
D804	8-719-988-62	DIODE 1SS355	
		< IC >	
IC301	8-752-066-36	IC CXA1563M	
IC304	8-759-106-56	IC uPC1297CA	
IC311	8-752-070-68	IC CXA1598M	
IC341	8-752-066-36	IC CXA1563M	
IC351	8-759-636-55	IC M5218AFP	
IC371	8-759-100-96	IC uPC4558G2	
IC372	8-759-100-96	IC uPC4558G2	
IC381	8-759-100-96	IC uPC4558G2	
IC385	8-759-100-96	IC uPC4558G2	
IC391	8-759-300-71	IC HD14053BFP	
IC395	8-759-636-55	IC M5218AFP	
IC421	8-759-100-96	IC uPC4558G2	
IC701	8-759-100-96	IC uPC4558G2	
IC801	8-759-422-06	IC M38172M4-171FP	
IC803	8-759-973-95	IC BA6219B	
IC804	8-759-165-82	IC PST600E-T	
		< JACK >	
J385	1-568-519-41	JACK, LARGE TYPE (PHONES)	
		< COIL >	
L121	1-410-780-11	INDUCTOR 27mH	
L122	1-410-778-11	INDUCTOR 18mH	
L221	1-410-780-11	INDUCTOR 27mH	
L222	1-410-778-11	INDUCTOR 18mH	
		< FILTER >	
LPF101	1-236-147-11	FILTER, LOW PASS	
LPF201	1-236-147-11	FILTER, LOW PASS	
		< JACK >	
PJ395	1-770-614-11	JACK, PIN 4P (LINE IN/OUT)	
		< TRANSISTOR >	
Q101	8-729-421-22	TRANSISTOR UN2211	
Q111	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q112	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q151	8-729-217-03	TRANSISTOR 2SK170	
Q152	8-729-217-03	TRANSISTOR 2SK170	
Q153	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q154	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q191	8-729-922-37	TRANSISTOR 2SD2144S	
Q201	8-729-421-22	TRANSISTOR UN2211	
Q211	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q212	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q251	8-729-217-03	TRANSISTOR 2SK170	
Q252	8-729-217-03	TRANSISTOR 2SK170	
Q253	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q254	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q291	8-729-922-37	TRANSISTOR 2SD2144S	
Q311	8-729-421-19	TRANSISTOR UN2213	
Q312	8-729-421-19	TRANSISTOR UN2213	
Q313	8-729-421-19	TRANSISTOR UN2213	
Q314	8-729-421-19	TRANSISTOR UN2213	
Q321	8-729-421-19	TRANSISTOR UN2213	
Q322	8-729-216-22	TRANSISTOR 2SA1162-G	
Q323	8-729-421-19	TRANSISTOR UN2213	
Q324	8-729-421-19	TRANSISTOR UN2213	
Q325	8-729-421-19	TRANSISTOR UN2213	
Q326	8-729-194-57	TRANSISTOR 2SC945-P	
Q327	8-729-194-57	TRANSISTOR 2SC945-P	
Q341	8-729-421-19	TRANSISTOR UN2213	
Q351	8-729-230-45	TRANSISTOR 2SC2458-YGR	
Q352	8-729-821-04	TRANSISTOR 2SA1317-STU	
Q371	8-729-107-43	TRANSISTOR 2SC3624-L18	
Q372	8-729-107-43	TRANSISTOR 2SC3624-L18	
Q373	8-729-107-43	TRANSISTOR 2SC3624-L18	
Q391	8-729-421-19	TRANSISTOR UN2213	
Q431	8-729-216-22	TRANSISTOR 2SA1162-G	
Q432	8-729-901-06	TRANSISTOR DTA144EK	
Q433	8-729-421-19	TRANSISTOR UN2213	
Q702	8-729-900-80	TRANSISTOR DTC114ES (US,CND,E,AUS)	
Q703	8-729-141-83	TRANSISTOR 2SB1094-LK	
Q704	8-729-209-15	TRANSISTOR 2SD2012	
Q705	8-729-209-15	TRANSISTOR 2SD2012	
Q706	8-729-119-78	TRANSISTOR 2SC403SP-51	
Q707	8-729-900-80	TRANSISTOR DTC114ES (US,CND,E,AUS)	
Q708	8-729-141-83	TRANSISTOR 2SB1094-LK	
Q709	8-729-119-78	TRANSISTOR 2SC403SP-51	
Q710	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q711	8-729-140-04	TRANSISTOR 2SB1116A-L	
Q712	8-729-224-63	TRANSISTOR 2SK246-BL	
Q722	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q802	8-729-421-19	TRANSISTOR UN2213	
Q803	8-729-901-06	TRANSISTOR DTA144EK	
Q804	8-729-901-06	TRANSISTOR DTA144EK	
Q805	8-729-421-19	TRANSISTOR UN2213	
Q806	8-729-421-22	TRANSISTOR UN2211	
Q807	8-729-421-22	TRANSISTOR UN2211	
Q808	8-729-421-22	TRANSISTOR UN2211	
Q809	8-729-421-22	TRANSISTOR UN2211	
Q810	8-729-801-84	TRANSISTOR 2SB1013-4	
Q812	8-729-216-22	TRANSISTOR 2SA1162-G	

Ref. No.	Part No.	Description			Remark
		< RESISTOR >			
R101	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R102	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R103	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R104	1-216-105-91	METAL GLAZE	220K	5%	1/10W
R105	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R111	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R112	1-216-073-00	METAL CHIP	10K	5%	1/10W
R113	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R114	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R116	1-216-058-00	METAL GLAZE	2.4K	5%	1/10W
R117	1-216-073-00	METAL CHIP	10K	5%	1/10W
R118	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R121	1-216-058-00	METAL GLAZE	2.4K	5%	1/10W
R122	1-216-101-00	METAL CHIP	150K	5%	1/10W
⚠R123	1-219-153-11	FUSIBLE	10	5%	1/4W F
R124	1-216-085-00	METAL CHIP	33K	5%	1/10W
R125	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R141	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R151	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R152	1-216-029-00	METAL CHIP	150	5%	1/10W
R153	1-216-041-00	METAL CHIP	470	5%	1/10W
R154	1-216-066-00	METAL CHIP	5.1K	5%	1/10W
R155	1-216-066-00	METAL CHIP	5.1K	5%	1/10W
R156	1-216-046-00	METAL CHIP	750	5%	1/10W
R157	1-216-046-00	METAL CHIP	750	5%	1/10W
R158	1-216-025-91	METAL GLAZE	100	5%	1/10W
R159	1-216-021-00	METAL CHIP	68	5%	1/10W
R160	1-216-068-00	METAL CHIP	6.2K	5%	1/10W
R161	1-216-081-00	METAL CHIP	22K	5%	1/10W
R162	1-216-100-00	METAL GLAZE	130K	5%	1/10W
R163	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R164	1-216-073-00	METAL CHIP	10K	5%	1/10W
R165	1-216-056-00	METAL GLAZE	2K	5%	1/10W
R166	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R181	1-216-083-00	METAL CHIP	27K	5%	1/10W
R182	1-216-035-00	METAL CHIP	270	5%	1/10W
R183	1-216-092-00	METAL GLAZE	62K	5%	1/10W
R185	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R186	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R187	1-216-033-00	METAL CHIP	220	5%	1/10W
R188	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R191	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R192	1-216-082-00	METAL GLAZE	24K	5%	1/10W
R193	1-216-073-00	METAL CHIP	10K	5%	1/10W
R194	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R195	1-216-079-00	METAL CHIP	18K	5%	1/10W
R196	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R197	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R198	1-216-081-00	METAL CHIP	22K	5%	1/10W
R201	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R202	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R203	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R204	1-216-105-91	METAL GLAZE	220K	5%	1/10W
R205	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R211	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R212	1-216-073-00	METAL CHIP	10K	5%	1/10W
R213	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R214	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R216	1-216-058-00	METAL GLAZE	2.4K	5%	1/10W
R217	1-216-073-00	METAL CHIP	10K	5%	1/10W
R218	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R221	1-216-058-00	METAL GLAZE	2.4K	5%	1/10W
R222	1-216-101-00	METAL CHIP	150K	5%	1/10W
⚠R223	1-219-153-11	FUSIBLE	10	5%	1/4W F
R224	1-216-085-00	METAL CHIP	33K	5%	1/10W
R225	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R241	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R251	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R252	1-216-029-00	METAL CHIP	150	5%	1/10W
R253	1-216-041-00	METAL CHIP	470	5%	1/10W
R254	1-216-066-00	METAL CHIP	5.1K	5%	1/10W
R255	1-216-066-00	METAL CHIP	5.1K	5%	1/10W
R256	1-216-046-00	METAL CHIP	750	5%	1/10W
R257	1-216-046-00	METAL CHIP	750	5%	1/10W
R258	1-216-025-91	METAL GLAZE	100	5%	1/10W
R259	1-216-021-00	METAL CHIP	68	5%	1/10W
R260	1-216-068-00	METAL CHIP	6.2K	5%	1/10W
R261	1-216-081-00	METAL CHIP	22K	5%	1/10W
R262	1-216-100-00	METAL GLAZE	130K	5%	1/10W
R263	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R264	1-216-073-00	METAL CHIP	10K	5%	1/10W
R265	1-216-056-00	METAL GLAZE	2K	5%	1/10W
R266	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R271	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R272	1-216-083-00	METAL CHIP	27K	5%	1/10W
R273	1-216-088-00	METAL CHIP	43K	5%	1/10W
R274	1-216-066-00	METAL CHIP	5.1K	5%	1/10W
R281	1-216-083-00	METAL CHIP	27K	5%	1/10W
R282	1-216-035-00	METAL CHIP	270	5%	1/10W
R283	1-216-092-00	METAL GLAZE	62K	5%	1/10W
R285	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R286	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R287	1-216-033-00	METAL CHIP	220	5%	1/10W
R288	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R291	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R292	1-216-082-00	METAL GLAZE	24K	5%	1/10W
R293	1-216-073-00	METAL CHIP	10K	5%	1/10W
R294	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R295	1-216-079-00	METAL CHIP	18K	5%	1/10W
R296	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R297	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R298	1-216-081-00	METAL CHIP	22K	5%	1/10W

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

MAIN HEADPHONE

Ref. No.	Part No.	Description			Remark
R301	1-208-813-11	METAL GLAZE	20K	2%	1/10W
R302	1-216-081-00	METAL CHIP	22K	5%	1/10W
R303	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R311	1-216-685-11	METAL CHIP	27K	2%	1/10W
R312	1-216-081-00	METAL CHIP	22K	5%	1/10W
R313	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R316	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R317	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R321	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R322	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R323	1-216-041-00	METAL CHIP	470	5%	1/10W
R324	1-216-050-00	METAL GLAZE	1.1K	5%	1/10W
R325	1-216-080-00	METAL CHIP	20K	5%	1/10W
R328	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R329	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R330	1-249-390-11	CARBON	5.6	5%	1/4W
R331	1-249-390-11	CARBON	5.6	5%	1/4W
R332	1-249-440-11	CARBON	82K	5%	1/4W
R333	1-249-440-11	CARBON	82K	5%	1/4W
R341	1-208-813-11	METAL GLAZE	20K	2%	1/10W
R342	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R343	1-216-081-00	METAL CHIP	22K	5%	1/10W
R344	1-216-081-00	METAL CHIP	22K	5%	1/10W
R351	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R352	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R371	1-216-054-00	METAL GLAZE	1.6K	5%	1/10W
R372	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R373	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R374	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R375	1-216-081-00	METAL CHIP	22K	5%	1/10W
R376	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R377	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R378	1-216-066-00	METAL CHIP	5.1K	5%	1/10W
R379	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
⚠R385	1-249-401-11	CARBON	47	5%	1/4W F
R391	1-216-081-00	METAL CHIP	22K	5%	1/10W
R401	1-216-080-00	METAL CHIP	20K	5%	1/10W
R402	1-216-078-00	METAL CHIP	16K	5%	1/10W
R403	1-216-070-00	METAL CHIP	7.5K	5%	1/10W
R404	1-216-089-91	METAL CHIP	47K	5%	1/10W
R405	1-216-080-00	METAL GLAZE	20K	5%	1/10W
R406	1-216-092-00	METAL GLAZE	62K	5%	1/10W
R407	1-216-082-00	METAL CHIP	24K	5%	1/10W
R408	1-216-079-00	METAL CHIP	18K	5%	1/10W
R409	1-216-074-00	METAL CHIP	11K	5%	1/10W
R410	1-216-085-00	METAL CHIP	33K	0.5%	1/10W
R411	1-216-087-91	METAL GLAZE	39K	5%	1/10W
R412	1-216-082-00	METAL GLAZE	24K	5%	1/10W
R413	1-216-085-00	METAL CHIP	33K	5%	1/10W
R414	1-216-090-00	METAL GLAZE	51K	5%	1/10W
R415	1-216-083-00	METAL CHIP	27K	5%	1/10W
R416	1-216-090-00	METAL GLAZE	51K	5%	1/10W
R417	1-216-083-00	METAL CHIP	27K	5%	1/10W
R418	1-216-081-00	METAL CHIP	22K	5%	1/10W
R423	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R425	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R426	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R427	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R431	1-216-081-00	METAL CHIP	22K	5%	1/10W
R432	1-216-033-00	METAL CHIP	220	5%	1/10W
R701	1-249-417-11	CARBON	1K	5%	1/4W
R702	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R703	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R704	1-216-030-00	METAL CHIP	160	5%	1/10W
R705	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R706	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R707	1-216-073-00	METAL CHIP	10K	5%	1/10W
R708	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R709	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R710	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R711	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R712	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R713	1-249-417-11	CARBON	1K	5%	1/4W
R714	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R715	1-216-072-00	METAL CHIP	9.1K	5%	1/10W
R716	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
				(US,CND,E,AUS)	
R717	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R718	1-216-081-00	METAL CHIP	22K	5%	1/10W
⚠R719	1-219-135-11	FUSIBLE	0.15	10%	1/4W F
⚠R720	1-219-137-11	FUSIBLE	0.33	10%	1/4W F
R721	1-249-425-11	CARBON	4.7K	5%	1/4W
R722	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R723	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R724	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R725	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
				(US,CND,E,AUS)	
⚠R730	1-219-139-11	FUSIBLE	0.68	10%	1/4W F
⚠R731	1-219-139-11	FUSIBLE	0.68	10%	1/4W F
R801	1-216-081-00	METAL CHIP	22K	5%	1/10W
R802	1-216-081-00	METAL CHIP	22K	5%	1/10W
R803	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R804	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R806	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R807	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R808	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R809	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R810	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R811	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R812	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R813	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R814	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R815	1-216-046-00	METAL CHIP	750	5%	1/10W
R816	1-216-041-00	METAL CHIP	470	5%	1/10W

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Ref. No.	Part No.	Description			Remark
⚠R817	1-212-954-11	FUSIBLE	6.8	5%	1/2W F
R822	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R823	1-216-073-00	METAL CHIP	10K	5%	1/10W
R824	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R825	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R831	1-216-073-00	METAL CHIP	10K	5%	1/10W
R832	1-216-073-00	METAL CHIP	10K	5%	1/10W
R834	1-216-083-00	METAL CHIP	27K	5%	1/10W
R835	1-216-083-00	METAL CHIP	27K	5%	1/10W
R845	1-216-073-00	METAL CHIP	10K	5%	1/10W
R846	1-216-073-00	METAL CHIP	10K	5%	1/10W
R847	1-216-073-00	METAL CHIP	10K	5%	1/10W
R848	1-216-073-00	METAL CHIP	10K	5%	1/10W
R849	1-216-073-00	METAL CHIP	10K	5%	1/10W
R850	1-216-073-00	METAL CHIP	10K	5%	1/10W
R851	1-216-073-00	METAL CHIP	10K	5%	1/10W
R852	1-216-073-00	METAL CHIP	10K	5%	1/10W
R853	1-216-073-00	METAL CHIP	10K	5%	1/10W
		< VARIABLE RESISTOR >			
RV111	1-238-019-11	RES, ADJ, CARBON 47K (REC EQ IV L)			
RV112	1-241-765-11	RES, ADJ, CARBON 22K (REC LEVEL L)			
RV121	1-241-765-11	RES, ADJ, CARBON 22K (REC BIAS L)			
RV151	1-241-759-21	RES, ADJ, CARBON 220 (PB LEVEL R)			
RV211	1-238-019-11	RES, ADJ, CARBON 47K (REC EQ IV R)			
RV212	1-241-765-11	RES, ADJ, CARBON 22K (REC LEVEL R)			
RV221	1-241-765-11	RES, ADJ, CARBON 22K (REC BIAS R)			
RV251	1-241-759-21	RES, ADJ, CARBON 220 (PB LEVEL R)			
RV312	1-241-762-11	RES, ADJ, CARBON 4.7K (REC EQ IV)			
		< TRANSFORMER >			
T121	1-433-344-11	TRANSFORMER, BIAS OSCILLATION			
T221	1-433-344-11	TRANSFORMER, BIAS OSCILLATION			
T321	1-423-614-11	TRANSFORMER, BIAS OSCILLATION			
		< TEST PIN >			
* TP321	1-564-506-11	PLUG, CONNECTOR 3P			
* TP802	1-560-060-00	PIN, CONNECTOR 2P			
		< VIBRATOR >			
X801	1-577-358-21	VIBRATOR, CERAMIC (4MHz)			

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Ref. No.	Part No.	Description			Remark
*	A-2007-529-A	PANEL BOARD, COMPLETE (US,CND,AUS)			
*	A-2007-532-A	PANEL BOARD, COMPLETE (AEP,UK,G,SP,MY)			
*	A-2007-534-A	PANEL BOARD, COMPLETE (E)			
		**********************			
		POWER SW 1 BOARD (AEP,UK,G,SP,MY)			
		*****************			
		POWER SW2 BOARD (US,CND,E,AUS)			
		*****************			
		TRANS 1 BOARD (EXCEPT E)			
		**************			
		TRANS 2 BOARD			
		*************			
		VOL BOARD			
		**********			
*	3-386-245-11	HOLDER (FL)			
		< CAPACITOR >			
⚠C717	1-113-925-11	ELECT	0.01uF	20%	250V (AEP,UK,G,SP,MY)
C720	1-136-165-00	FILM	0.1uF	5%	50V
C721	1-136-165-00	FILM	0.1uF	5%	50V
		< CONNECTOR >			
CN901	1-778-065-11	SOCKET, CONNECTOR 39P			
CN902	1-568-825-11	CONNECTOR, FFC/FPC 6P			
		< CONNECTOR >			
* CNP702	1-580-230-31	PIN, CONNECTOR (PC BOARD) 2P (EXCEPT E)			
CNP703	1-568-226-11	PIN, CONNECTOR 2P (AEP,UK,G,SP,MY)			
		< DIODE >			
D901	8-719-987-63	DIODE 1N4148M			
D902	8-719-987-63	DIODE 1N4148M			
D903	8-719-987-63	DIODE 1N4148M			
		< IC >			
IC901	8-741-810-59	IC SBX1810-59			
		< LINE FILTER >			
⚠LF701	1-424-485-11	FILTER, LINE (EXCEPT E)			
		< TRANSISTOR >			
Q901	8-729-900-89	TRANSISTOR DTC144ES			
Q902	8-729-900-89	TRANSISTOR DTC144ES			
Q903	8-729-900-89	TRANSISTOR DTC144ES			
		< RESISTOR >			
R115	1-249-425-11	CARBON	4.7K	5%	1/4W
R215	1-249-425-11	CARBON	4.7K	5%	1/4W
R327	1-249-429-11	CARBON	10K	5%	1/4W
R833	1-249-429-11	CARBON	10K	5%	1/4W
R838	1-249-441-11	CARBON	100K	5%	1/4W

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PANEL | POWER SW1 | POWER SW2 | TRANS 1 | TRANS 2 | VOL | SW A

Ref. No.	Part No.	Description			Remark
R839	1-249-441-11	CARBON	100K	5%	1/4W
R840	1-249-441-11	CARBON	100K	5%	1/4W
R841	1-249-441-11	CARBON	100K	5%	1/4W
R842	1-249-441-11	CARBON	100K	5%	1/4W
R843	1-249-441-11	CARBON	100K	5%	1/4W
R844	1-249-441-11	CARBON	100K	5%	1/4W
R861	1-249-441-11	CARBON	100K	5%	1/4W
R901	1-249-441-11	CARBON	100K	5%	1/4W
R905	1-247-838-00	CARBON	2K	5%	1/4W
R906	1-249-422-11	CARBON	2.7K	5%	1/4W
R907	1-247-848-11	CARBON	5.1K	5%	1/4W
R908	1-249-429-11	CARBON	10K	5%	1/4W
R909	1-247-866-11	CARBON	30K	5%	1/4W
R910	1-247-838-00	CARBON	2K	5%	1/4W
R911	1-249-422-11	CARBON	2.7K	5%	1/4W
R912	1-247-848-11	CARBON	5.1K	5%	1/4W
R915	1-249-429-11	CARBON	10K	5%	1/4W
R916	1-247-866-11	CARBON	30K	5%	1/4W
R917	1-247-836-11	CARBON	1.6K	5%	1/4W
R918	1-247-840-00	CARBON	2.4K	5%	1/4W
R919	1-249-423-11	CARBON	3.3K	5%	1/4W
R920	1-249-426-11	CARBON	5.6K	5%	1/4W
R921	1-247-858-11	CARBON	13K	5%	1/4W
R922	1-247-868-11	CARBON	36K	5%	1/4W
R923	1-247-807-31	CARBON	100	5%	1/4W
		< VARIABLE RESISTOR >			
RV311	1-225-221-11	RES, VAR, CARBON 5K/5K (REC LEVEL)			
RV321	1-225-222-11	RES, VAR, CARBON 5K/5K (BIAS)			
RV395	1-225-219-11	RES, VAR, CARBON 50K/50K (BALANCE)			
RV396	1-225-220-11	RES, VAR, CARBON 50K/50K (REC LEVEL)			
		< SWITCH >			
S901	1-554-303-21	SWITCH, TACTILE(■)			
S902	1-554-303-21	SWITCH, TACTILE(◀◀)			
S903	1-554-303-21	SWITCH, TACTILE(▶▶)			
S904	1-554-303-21	SWITCH, TACTILE(●)			
S905	1-554-303-21	SWITCH, TACTILE(○)			
S906	1-554-303-21	SWITCH, TACTILE(▷)			
S907	1-554-303-21	SWITCH, TACTILE(❚❚)			
S908	1-554-303-21	SWITCH, TACTILE(MEMORY)			
S909	1-554-303-21	SWITCH, TACTILE(RESET)			
S910	1-554-303-21	SWITCH, TACTILE(MONITOR)			
S911	1-554-303-21	SWITCH, TACTILE(CALIBRATION)			
S913	1-762-647-11	SWITCH, ROTARY(DOLBY NR)			
S915	1-762-580-11	SWITCH, PUSH (1 KEY)(POWER)(US,CND,E,AUS)			
⚠S922	1-762-581-11	SWITCH, AC POWER PUSH(1 KEY) (POWER) (AEP,UK,G,SP,MY)			
		< INDICATOR TUBE >			
VFD901	1-517-163-11	INDICATOR TUBE, FLUORESCENT			

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Ref. No.	Part No.	Description			Remark
*	1-634-841-14	SW A BOARD ***********			
		< CONNECTOR >			
* CNP81	1-568-852-11	SOCKET, CONNECTOR 9P			
		< IC >			
IC81	8-749-924-10	IC PHONT REFLECTOR NJL5165K-B(H1)			
IC82	8-749-924-10	IC PHONT REFLECTOR NJL5165K-B(H1)			
		< RESISTOR >			
R81	1-249-414-11	CARBON	560	5%	1/4W
R83	1-247-834-11	CARBON	1.3K	5%	1/4W
R84	1-249-417-11	CARBON	1K	5%	1/4W
R85	1-249-408-11	CARBON	180	5%	1/4W
R86	1-249-408-11	CARBON	180	5%	1/4W
		< SWITCH >			
S81	1-571-958-11	SWITCH, PUSH (1 KEY)(STOP SW)			
S82	1-571-281-21	SWITCH, LEAF (CrO2)			
S83	1-571-281-21	SWITCH, LEAF (METAL)			
S84	1-571-281-21	SWITCH, LEAF (REC)			
S86	1-571-281-21	SWITCH, LEAF (HALF)			

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MISCELLANEOUS

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Ref. No.	Part No.	Description
⚠10	1-551-188-XX	CORD, POWER (E)
⚠10	1-558-945-21	CORD, POWER (POLAR.SPT-1)(US,CND)
⚠10	1-575-651-21	CORD, POWER (AEP,G,SP,MY)
⚠10	1-696-586-11	CORD, POWER (UK)
⚠10	1-696-845-11	CORD, POWER (AUS)
⚠10	1-751-523-11	CORD, POWER (UK)
⚠11	1-569-007-11	ADAPTER, CONVERSION 2P (E)
57	1-777-109-11	WIRE (FLAT TYPE) (39 CORE)
60	1-777-110-11	WIRE (FLAT TYPE) (6 CORE)
66	1-769-916-11	WIRE (FLAT TYPE) (9 CORE)
67	1-769-878-11	WIRE (FLAT TYPE) (7 CORE)
120	1-638-983-11	MOTOR FLEXIBLE BOARD
HE101	1-543-673-11	HEAD, MAGNETIC (ERASE)
HRP101	1-543-733-11	HEAD,MAGNETIC(RECORD/PLAYBACK)
M1	X-3363-501-2	MOTOR ASSY(REEL)
M2	X-3368-855-1	MOTOR ASSY(CAPSTAN)
⚠S701	1-692-155-11	SELECTOR, POWER VOLTAGE (VOLTAGE SELECTOR) (E)
⚠T701	1-429-611-11	TRANSFORMER, POWER (US,CND)
⚠T701	1-429-612-11	TRANSFORMER, POWER (EXCEPT US,CND,AUS, E)
⚠T701	1-429-613-11	TRANSFORMER, POWER (E)
⚠T701	1-429-659-11	TRANSFORMER, POWER (AUS)
VFD901	1-517-163-11	INDICATOR TUBE, FLUORESCENT

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The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS *******************************	
	1-551-734-11	CORD, CONNECTION	
	3-856-131-11	MANUAL, INSTRUCTION (ENGLISH,FRENCH, SPANISH,PORTUGUESE)(CND,AEP)	
	3-856-131-21	MANUAL, INSTRUCTION (ENGLISH)(US,UK,AUS)	
	3-856-131-31	MANUAL, INSTRUCTION (GERMAN,DUTCH, SWEDISH,ITALIAN)(AEP)	
	3-856-131-41	MANUAL, INSTRUCTION (GERMAN)(G)	
	3-856-131-51	MANUAL, INSTRUCTION (ENGLISH,FRENCH, SPANISH,CHINESE)(E,SP,MY)	
*	3-932-083-01	CUSHION (KE500S)	
*	3-935-038-01	INDIVIDUAL CARTON (AEP,UK,G,SP,MY)	
*	3-935-040-01	INDIVIDUAL CARTON (KA1ESA)	
*	3-935-093-01	INDIVIDUAL CARTON (KE500S:US,E,AUS)	
*	3-936-086-01	CUSHION (KA1ESA)	

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HARDWARE LIST

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Ref. No.	Part No.	Description	Remark
#1	7-682-548-04	SCREW +BVTT 3X8 (S)	
#2	7-685-871-01	SCREW +BVTT 3X6 (S)	
#3	7-685-871-09	SCREW +BVTT 3X6 (S)(KA1ESA)	
#4	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#5	7-685-862-09	SCREW +BVTT 2.6X6 (S)	
#6	7-685-134-19	SCREW (+ PTPWH)(2.6X8)	
#7	7-621-772-10	SCREW +B 2X4	
#8	7-627-556-08	SCREW +P 2.6X2.8	
#9	7-621-775-00	SCREW +B 2.6X3	

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